



**FABIOLA DIOGO DE SIQUEIRA FROTA**

**INFLUÊNCIA DE FATORES RELACIONADOS À SAÚDE BUCAL NA  
QUALIDADE DE VIDA EM ESCOLARES**

**INFLUENCE OF FACTORS ASSOCIATED WITH ORAL HEALTH ON QUALITY  
OF LIFE OF SCHOOLCHILDREN**

Piracicaba  
2014





**Universidade Estadual de Campinas  
Faculdade de Odontologia de Piracicaba**

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Tese apresentada à Faculdade de Odontologia de Piracicaba, Universidade Estadual de Campinas, como requisito para a obtenção do Título de Doutora em Odontologia, Área de Concentração: Odontopediatria.

Thesis presented to the Piracicaba School of Dentistry of the University of Campinas in partial fulfillment of the requirements for the degree of Doctor in Dental Clinic, in the Pediatric Dentistry area.

Orientadora: Profa. Dra. Maria Beatriz Duarte Gavião

Este exemplar corresponde à versão final da tese defendida por Fabiola Diogo de Siqueira Frota e orientada pelo(a) Prof(a). Dra. Maria Beatriz Duarte Gavião.

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## ABSTRACT

The conditions of poor oral health have been increasingly recognized as an important cause of negative impacts on quality of life (QoL) of children and adolescents. Thus, the purpose of this research was to evaluate the oral health-related quality of life (OHRQoL) and associated factors of children and adolescent aged eight to fourteen years of both genders, from public and private schools in Fortaleza-CE, Brazil. For the assessment of oral health, the following variables were considered: presence and severity of caries, malocclusion, fluorosis and gingivitis, according to the criteria of the World Health Organization. Self-perceived OHRQoL was assessed using age-specific questionnaires: the Brazilian versions of the Child Perceptions Questionnaire (CPQ) for children eight to ten (CPQ<sub>8-10</sub>) and adolescents eleven to fourteen years (CPQ<sub>11-14</sub>) and their short versions with eight questions. Two items of these questionnaires were also used to assess global perceptions of oral health (OH) and emotion well-being (EWB). In assessing factors associated with OHRQoL, the variables considered were: socio-demographic characteristics (age, gender, race of child, number of amenities in the home, educational level of the parent and family income), use of dental services (past and current experience) and oral hygiene habits (frequency of brushing, flossing and mouthwash). The specific objectives of the first study (Validity and reliability of the Brazilian short forms version of the Child Perceptions Questionnaire (CPQ<sub>8-10</sub>) (CPQ<sub>11-14</sub>) and second research (Socioeconomic status, oral conditions and oral habits related to quality of life in schoolchildren) chapters were, respectively, to evaluate the psychometric properties of the questionnaires (short form) for use in schoolchildren and to compare the perception of OHRQoL between groups with different oral conditions (dental caries, gingivitis, fluorosis, facial trauma and malocclusion) and a control group without oral alterations. To improve understanding of the relationship between perceptions of these individuals OH and EWB, the first study also sought to evaluate the association between oral conditions and global perceptions of OH and EWB in this population. The second study also aimed to identify the concepts related to the responses about OH and EWB in each clinical group. The questionnaires proved to be valid and reliable for use in children and adolescents. However, the results suggested that children and adolescents present global views about the concepts of OH and

EWB. These results will allow testing the psychometric properties of the questionnaires in individuals with different socioeconomic status and oral conditions and initiating a series of studies on the factors associated with self-perceived OHRQoL. Finally, socioeconomic status for adolescents (11–14 years) was associated with negative effects on the overall perception of oral health.

**Key-words:** Child. Adolescent. Social class. Quality of life. Oral health.



## RESUMO

A precariedade das condições de saúde bucal tem sido cada vez mais reconhecida como uma importante causa de impactos negativos na qualidade de vida (QV) de crianças e adolescentes. Assim, o objetivo geral desta pesquisa foi avaliar a qualidade de vida relacionada à saúde bucal (QVRSB) e fatores associados em crianças e adolescentes, de oito a catorze anos, de ambos os gêneros, escolares da rede pública e privada do município de Fortaleza-CE, Brasil. Na avaliação de saúde bucal as seguintes variáveis foram consideradas: presença de cárie, maloclusão, fluorose e gengivite, de acordo com os critérios da Organização Mundial da Saúde. A autopercepção da QVRSB foi avaliada por meio de questionários específicos para os grupos etários, as versões brasileiras do *Child Perceptions Questionnaire* (CPQ), para crianças de oito a dez anos (CPQ<sub>8-10</sub>) e adolescentes de onze a catorze anos (CPQ<sub>11-14</sub>) na versão curta com oito questões. Duas questões destes questionários também foram utilizadas para avaliar as percepções globais de saúde bucal (SB) e bem-estar (BE). Na avaliação dos fatores associados à QVRSB, as variáveis consideradas foram: características sociodemográficas (idade, gênero, raça da criança, número de utensílios em casa, nível educacional da mãe ou responsável e renda familiar), utilização de serviços odontológicos (experiência passada e atual) e hábitos de higiene bucal (frequência de escovação, uso do fio dental e enxaguatório bucal). Os dados obtidos foram discutidos em dois estudos, denominados capítulos no presente trabalho. Os objetivos específicos do primeiro (*Validity and reliability of the Brazilian short forms of the Child Perceptions Questionnaire (CPQ<sub>8-10</sub>) (CPQ<sub>11-14</sub>)*) e segundo (*Socioeconomic status, oral conditions and oral habits related to quality of life in schoolchildren*) capítulos foram, respectivamente, avaliar as propriedades psicométricas dos questionários na versão curta para uso em escolares e comparar a percepção de QVRSB entre grupos com diferentes condições bucais (cárie, gengivite, fluorose, trauma facial e maloclusão) grupo controle composto por indivíduos sem alterações bucais. Para melhorar o entendimento sobre a relação entre as percepções de SB e BE destes indivíduos o primeiro estudo objetivou também avaliar a associação entre as condições bucais e percepções globais de SB e BE desta população. O segundo estudo também objetivou identificar os conceitos associados às respostas sobre SB e BE em cada variável. Os questionários mostraram-se válidos e confiáveis para uso em crianças

e adolescentes. Contudo, os resultados sugeriram que as crianças e adolescentes apresentam visão global sobre os conceitos de SB e BE. Estes resultados possibilitaram testar as propriedades psicométricas dos questionários em indivíduos com diferentes condições socioeconômicas e clínicas e iniciar uma série de estudos sobre os fatores associados à autopercepção da QVRSB. Por fim, o status socioeconômico para os adolescentes (11–14 anos) estiveram associadas com impactos negativos na percepção global de saúde bucal.

**Palavras-chaves:** Criança. Adolescente. Classe social. Qualidade de vida. Saúde bucal.

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Dedico este trabalho as minhas avós...

**Sulita Belfort e Luzanira Lima**  
*(in memoriam)*



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*“Dá a quem amas: asas para voar, raízes para voltar e motivos para ficar.”*

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*“A mente que se abre a uma nova ideia jamais voltará ao seu tamanho original.”*

**Albert Einstein**



## INTRODUÇÃO

A condição de saúde bucal precária tem sido cada vez mais reconhecida como uma importante causa de impactos negativos no desempenho diário e na qualidade de vida (QV) (Jokovick *et al.*, 2002; Foster Page *et al.*, 2005; Locker, 2007; Goursand *et al.*, 2008; Barbosa *et al.*, 2009). Atualmente, há um interesse crescente na QV de crianças (Mansour *et al.*, 2003; Meuleners *et al.*, 2003), incluindo a saúde bucal (Tapsoba *et al.*, 2000; Jokovic *et al.*, 2002; Barbosa *et al.*, 2010).

A ausência de um instrumento que avaliasse qualidade de vida *per se*, com perspectiva internacional, fez com que a Organização Mundial da Saúde (OMS) constituísse um Grupo de Qualidade de Vida, World Health Organization Quality of Life (WHOQOL) com a finalidade de desenvolver instrumentos capazes de fazê-lo dentro de uma perspectiva transcultural (Fleck, 2000). Como não havia consenso sobre a definição de qualidade de vida, o primeiro passo para o desenvolvimento do instrumento (WHOQOL) foi a busca da definição do conceito. Assim, a OMS reuniu especialistas de várias partes do mundo, que definiram qualidade de vida como *a percepção do indivíduo de sua posição na vida no contexto da cultura e sistema de valores nos quais ele vive e em relação aos seus objetivos, expectativas, padrões e preocupações* (WHO, 1997).

Até recentemente, a qualidade de vida das crianças era avaliada utilizando os pais como informantes, pois se considerava que essas não poderiam relatar corretamente a relação saúde e qualidade de vida, por causa das limitações nas capacidades e habilidades cognitivas de comunicação, o que determinaria falhas de validade e confiabilidade nas avaliações psicométricas (Theunissen *et al.*, 1998; Barbosa e Gavião, 2008).

No entanto, uma série de instrumentos desenvolvidos tem demonstrado que, com técnicas e questionário adequado, é possível obter informações válidas e confiáveis das crianças relativas à saúde relacionadas com a qualidade de vida (Jokovick *et al.*, 2002; Filstrup *et al.*, 2003; Broder, 2007). Estes instrumentos têm sido destinados à aplicação em crianças com ampla variedade de alterações bucais e faciais, afirmando conceitos contemporâneos de saúde e adequados às diferenças de desenvolvimento nas diversas faixas etárias (Pal, 1996; French *et al.*, 1998; Barbosa e Gavião, 2008).

## **Questionário de qualidade de vida (Child Perceptions Questionnaire/CPQ)**

O *Child Perceptions Questionnaire* (CPQ) é um desses instrumentos (Jokovick *et al.*, 2002, 2004). O CPQ existe em duas versões: o CPQ<sub>8-10</sub>, para a faixa etária de 8 a 10 anos, composto por 29 itens e o CPQ<sub>11-14</sub>, para a faixa etária de 11 a 14 anos, composto por 41 itens, sendo que ambos avaliam a percepção das crianças e adolescente sobre como os impactos na saúde bucal influenciam no desenvolvimento físico e psicossocial (Wogelius *et al.*, 2009; Lau *et al.*, 2009). Os questionários foram desenvolvidos no Canadá (Jokovick *et al.*, 2002, 2004) e a validade e confiabilidade foram confirmadas em vários estudos em diferentes países como Nova Zelândia (Foster Page *et al.*, 2005), Inglaterra (Marshman *et al.*, 2005; O'Brien *et al.*, 2006), Arábia Saudita (Brown e Al-Khayal, 2006), China (McGrath *et al.*, 2008), Austrália (Do e Spencer, 2008), Dinamarca (Wogelius *et al.*, 2009), Brasil (Goursand *et al.*, 2008; Barbosa *et al.*, 2009; Traebert *et al.*, 2010), Alemanha (Bakes *et al.*, 2011), México (Aguilar-Díaz *et al.*, 2011), Nigéria (Kolawole *et al.*, 2011), Rússia (koposova *et al.*, 2012) e Camboja (Turton *et al.*, 2013).

Com o intuito de ampliar a aplicação do CPQ, reduzir tempo e custos envolvidos com impressão, coleta de dados e diminuir a probabilidade de itens não respondidos, desenvolveu-se o CPQ na versão curta (Jokovick *et al.*, 2006; Foster Page *et al.*, 2008). A versão curta do CPQ demonstrou confiabilidade e validade aceitável, confirmando assim a aplicabilidade em crianças e adolescentes (Jokovick *et al.*, 2006; Torres *et al.*, 2009).

## **Alterações Bucais**

As crianças e os adolescentes são afetados não só por problemas psicológicos, mas também por inúmeras alterações bucais e faciais, as quais têm o potencial de comprometer o funcionamento, bem-estar e qualidade de vida (Satcher, 2000). Essas vão desde condições comuns, como a cárie dentária, maloclusões, as fissura labial e ou palatina e anomalias craniofaciais. No estudo de Leme *et al.* (2013), observou-se que em crianças e adolescentes que apresentavam algum tipo de disfunção orofacial esta condição exerceu um impacto negativo na qualidade de vida relacionada a saúde bucal.

A cárie dentária é uma patologia multifatorial, progressiva, caracterizada pela destruição em meio ácido do esmalte, dentina e cemento, iniciada por atividade microbiana à superfície do

dente (Pereira *et al.*, 2010). Entretanto, apesar das sinalizações de melhoria na situação, a doença ainda é um dos agravos de maior prevalência no Brasil (Noro *et al.*, 2009). No estudo de Low *et al.* (1999), Verificou-se que a cárie precoce da infância afeta a qualidade de vida de crianças pré-escolares.

Além da cárie, doenças periodontais, maloclusões, câncer bucal e fluorose são referidos como sendo um problema na odontologia. Pesquisas sobre flúor e fluorose devem permitir comparações internacionais, considerando que pobreza e baixo *status* socioeconômico são indicadores consistentes de risco à cárie, e que a perspectiva da saúde pública na redução dessa condição é com o uso do flúor, maximizando os benefícios (prevenindo e reduzindo a cárie dentária) e minimizando os riscos em relação à fluorose dentária e óssea, por meio da identificação de fatores do meio ambiente social e cultural associados com excessiva exposição ao flúor (Meneghim *et al.*, 2007). Os resultados do estudo de Chankanka *et al.* (2010) indicaram que fluorose muito leve e moderada tinham pouco ou nenhum efeito sobre a saúde bucal relacionada com a qualidade de vida.

Alguns estudos brasileiros (Araújo *et al.*, 2010; Paula *et al.*, 2012; Zanata *et al.*, 2012), mostraram que a doença periodontal tem um impacto sobre a qualidade de vida. Assim, a identificação desse impacto pode constituir uma oportunidade para a promoção de ações mais eficaz e adequada a serem empregadas. A maloclusão também tem impacto significativo na saúde bucal relacionada à qualidade de vida (OHRQoL) em crianças, tendo como método de avaliação o CPQ (Jokovic *et al.*, 2002; O'Brien *et al.*, 2006; Johal *et al.*, 2007; Barbosa *et al.*, 2011).

As lesões de trauma dentário podem produzir significativos impactos emocionais e no bem-estar social das crianças e suas famílias (Berger *et al.*, 2009). Cortes *et al.* (2002), relataram que as crianças com dentes fraturados obtiveram um impacto negativo maior sobre mastigação, higiene bucal, ao ato de sorrir e mostrar os dentes sem constrangimento do que as crianças sem lesão. A dor, deformação estética ou outros efeitos psicológicos, gerados pelo trauma fazem com que as crianças evitem rir ou sorrir, e isso pode afetar a auto-estima (Marcenes *et al.*, 2005; Fakhruddin *et al.*, 2008).

Há ainda a considerar o desafio de estabelecer uma rotina de avaliação de qualidade de vida, o que inclui demonstrar a utilidade desses instrumentos para aprimorar processos diagnósticos e para a avaliação sistemática de resultados de tratamento (Seidl e Zannon, 2004), sendo de importância para o conhecimento científico a identificação de problemas bucais influenciados por variáveis socioeconômicas que possam interferir na qualidade de vida, fatores que corroboram com o estudo de Paula *et al.* (2013), que encontrou diferentes impactos na qualidade de vida relacionada à saúde bucal (QVRSB) em crianças e pré-adolescentes. Foster Page *et al.* (2012) demonstraram que características psicossociais parecem contribuir de forma importante para QVRSB.

Sendo assim, o objetivo geral desta pesquisa foi:

- avaliar a influência de variáveis socioeconômicas (renda familiar, utensílios domésticos e nível educacionais dos pais ou responsáveis) na QVRSB em crianças e pré-adolescentes, de oito a catorze anos, de ambos os gêneros, escolares da rede pública e privada do município de Fortaleza, CE, Brasil.

Os objetivos específicos deste trabalho foram:

- avaliar as propriedades psicométricas dos questionários na versão curta CPQ<sub>8-10</sub> (8 questões) e CPQ<sub>11-14</sub> (8 questões) para uso em crianças e adolescentes;
- comparar as percepções de QVRSB entre grupos com diferentes condições bucais (cárie, hábitos nocivos, maloclusão, gengivite, fluorose, trauma) e grupo controle composto de indivíduos sem alterações bucais;
- identificar os conceitos associados às respostas de cada grupo clínico;
- avaliar a influência de variáveis sociodemográficas (idade e gênero), utilização de serviços odontológicos (experiência passada e atual) e hábitos de higiene bucal (frequência de escovação, fio dental e enxaguatório bucal) nas percepções de QVRSB e avaliar a associação entre as condições bucais, percepções globais de saúde bucal e bem-estar geral desta população.

# CAPÍTULO 1

## **Validity and reliability of the Brazilian Portuguese short forms of the Child Perceptions Questionnaires (CPQ<sub>8-10</sub>) (CPQ<sub>11-14</sub>)**

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## ABSTRACT

**Aim:** to investigate the validity and reliability of Brazilian Portuguese short versions of the Child Perceptions Questionnaire (CPQ) in schoolchildren from Fortaleza, CE, Brazil, and compare to their perceptions about oral health-related quality of life OHRQoL for different oral conditions. **Methods:** 287 students aged 8-14 years were recruited from the public and private school in Fortaleza, CE, Brazil. Participants were examined for dental caries, gingivitis, fluorosis, facial trauma and malocclusions. OHRQoL was measured using the Brazilian Portuguese versions of CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> short forms (SF:8). Socio-demographic characteristics and dental history were evaluated using a specific questionnaire. Bivariate and multivariate analyses were used to identify the variables associated with CPQ scores. **Results:** Intra-examiner reliability values were excellent for the oral health conditions items. Positive correlation between the CPQ scores and global oral health, as well as the overall well-being ratings ( $p < 0.001$ ) were found, supporting the construct validity. The Cronbach's alphas were 0.78 for CPQ<sub>8-10</sub> and 0.75 for CPQ<sub>11-14</sub> short forms. For the overall CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> (SF:8) scales, the corrected item-total correlation coefficients ranged from 0.55-0.72 and from 0.53-0.61, respectively. **Conclusions:** The questionnaires are valid and reliable for use in schoolchildren with different oral health conditions.

**Key words:** Child. Oral health. Socioeconomic status. Quality of life.

## INTRODUCTION

The researchers assert the increasing interest in the shortening of composite measurement scale (CMS), in domains such as behavioral, physical and psychological functioning, and recently health-related quality of life (HRQoL) [1]. In this context, oral health-related quality of life (OHRQoL) has been used to measure the extent to which an individual's daily living is affected by oral diseases [2]. For children and preadolescents, Jokovic *et al.* [3, 4] developed the Child Perceptions Questionnaires (CPQ) for ages 8-10 years (CPQ<sub>8-10</sub>) [3] and 11-14 years (CPQ<sub>11-14</sub>) [4] considering their cognitive abilities and life style. After that, CPQ have been extensively used in different countries and cultures, including Brazil [5]. The Brazilian Portuguese version of the CPQ<sub>8-10</sub> [6] and the CPQ<sub>11-14</sub>, [7] proved to be fully comprehensible to the Brazilian children and preadolescents and were considered useful instruments for assessing oral health-related quality of life (OHRQoL) in that population. Moreover, Ramos-Jorge *et al.* [8] demonstrated adequate psychometric properties of the self-administered CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> among children from a higher socioeconomic status. Two other studies performed in Brazil using the original version of the CPQ<sub>11-14</sub> concluded that the clinical, socioeconomic and home environmental factors evaluated exerted a negative impact on child OHRQoL [9, 10]. Additionally, Barbosa *et al.* [11] have suggested that children and preadolescents with poor emotional well-being were more sensitive to the impacts of oral health and its effects on overall well-being.

CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> is a 29 and a 41 items measure of oral-health-related quality of life (OHRQoL), respectively, encompassing four domains: oral symptoms, functional limitations, emotional and social well-being [5]. To broaden the CPQ application by decreasing the likelihood of unit or item non-response and reducing respondent burden, Jokovic *et al.* [4] developed the short-forms of the CPQ<sub>11-14</sub>. This resulted in an 8-item version and a 16-item version of the instruments with excellent criterion validity and good construct validity [3, 4].

The results of Torres *et al.* [12] provided evidence of the satisfactory properties of reliability and construct validity of the CPQ<sub>11-14</sub> 8 and 16 item, similar to those of the original instrument, thereby demonstrating their applicability in a Brazilian population; but it was acknowledged that these forms require testing in other clinical and general population samples, such as in the northeast in Brazil, where they have not been conducted. However, the shortened CPQ<sub>8-10</sub> has not been developed so far. Thus, the objective of the current study were to

investigate the validity and reliability of the CPQ short form version (**SF:8**) in eight-to fourteen-year-old from Fortaleza, CE, Brazil, using the questions that presented more impact in the CPQ Brazilian versions accordant the studies of Barbosa et al. [5-7].

## **MATERIAL AND METHODS**

This study was approved by the Research Ethics Committee of the Piracicaba Dental School, University of Campinas (protocol nº015/2013).

A cross-sectional study with students of public and private schools of Fortaleza- CE, Brazil, was developed. Fortaleza city has 510.423 scholars, with 348.091 enrolled in the elementary school system [13]. The sample size was calculated by Epi info version 7.0 software. A standard error of 5%, a 90% confidence interval level and a 58.3% prevalence of caries [14] were used for the calculation. The minimum sample size to satisfy the requirements was estimated at 263 subjects. A total of 287 students (120 boys and 167 girls), with no systemic diseases or communication, participated in the study. The subjects, ranging in age from 8 to 14 years, were from seven public (73.5%) and four private schools. Fortaleza city is dividing in six subareas and was select one of it in each subarea randomly. The exclusion criteria were children without obtained parental consent or refused to participate.

Family and child socio-demographic factors were collected via a questionnaire developed specifically for this study. The Brazilian Association of Population Studies (ABEP) criteria, which contain information about household income, parent(s) education and household amenities were used to classify the socioeconomic status in five levels: A, B, C, D and E, with A being the highest and E the lowest. For this, the A1 and A2, B1 and B2 SES levels were pooled in A and B levels, respectively [15].

### **Oral health measures**

Clinical examination was performed by a single examiner (F.D.S.F.) trained by an experienced pediatric dentist (M.B.D.G.), using a millimeter probe, mouth mirror, and metal millimeter ruler. Moreover, sterile gauzes were used to provide tissue spacing and tooth drying, as well as to remove dental biofilm. Biosafety principles established by the World Health Organization (WHO) were followed [16]. The presence/absence of the following conditions



was evaluated, according to the methodology set forth by the WHO [16]: dental caries, gingivitis, dental fluorosis, facial trauma and malocclusion. All examinations were performed outside of the classroom during the day under sunlight. Dental caries was quantified using the sum of decayed, missing, and filled primary (dmft) and permanent teeth (DMFT). Teeth were marked as 'decayed' when any of the following characteristics were observed: unmistakable cavitations on the occlusal, buccal or lingual walls; a detectable softened floor or wall; a filled tooth with signs of caries. When in doubt, teeth were recorded as sound. Teeth extracted due to caries were marked as 'missing'.

The gingivitis was assessed using the Community Periodontal Index (CPI), which classifies the periodontal status based on six index teeth (16, 11, 26, 36, 31 and 46) in patients under the age of 20 years. The codes are the following: 0 = healthy and 1 = bleeding observed directly or with a mouth mirror after probing.

The presence or absence and the severity of dental fluorosis were evaluated using Dean's index criteria (DI) [17] with the following levels: 0 = normal; 1 = questionable; 2 = very mild; 3 = mild; 4 = moderate; and 5 = severe. The recording was based on the two teeth that were most affected.

The classification for facial trauma followed criterion used for the Andreasen & Andreasen [18], taking into account the occurrence of dental trauma in primary and permanent teeth.

The occlusal assessment was carried out with the teeth in centric occlusion, recording the following aspects: overbite, overjet and crossbite [19, 20, 21]. Horizontal overlap of the incisors was considered overjet. The measurement (in millimeters) was performed with the teeth in centric occlusion using the millimeter probe positioned parallel to the occlusal plane. Overlap from 0-3 mm was considered as normal overjet; greater than 3 mm, as increased overjet; and less than 0 mm, as anterior crossbite [19]. Normal overbite was defined when upper incisors overlapped lower incisors by 2 mm. Overbite greater than 2 mm was designated deep overbite [20]. Anterior open bite was recorded in the absence of contact between anterior teeth when posterior teeth were in occlusion. Posterior crossbite was recorded when upper posterior teeth were occluded in lingual relationship to lower ones in centric occlusion [19]. The presence or absence of physiologic spaces between primary teeth was noted, as well as the presence or absence of primate spaces (spaces mesial to maxillary canine and distal to

mandibular primary canine) [22]. The presence of crowding was considered as either single-segment (in one arch only) or two segments (in both arches) [23, 24]. The participant was diagnosed with malocclusion when presenting at least one of the aforementioned conditions [20].

### **Oral health-related quality of life**

Data were collected using the Brazilian Portuguese short versions of the CPQ for individuals aged 8–10 years (CPQ<sub>8–10</sub>**SF:8**) and 11–14 years (CPQ<sub>11–14</sub>**SF:8**), containing eight questions that presented more impact in the studies of Barbosa et al. [5]. The questions were grouped into four domains: oral symptoms (OS), functional limitations (FL), emotional well-being (EW) and social well-being (SW). CPQ items used Likert-type scales with response options of never = 0, once or twice = 1, sometimes = 2, often = 3 and everyday or almost everyday = 4. For the CPQ<sub>8–10</sub>**SF:8**, the period of recall was 4 weeks; for the CPQ<sub>11–14</sub>**SF:8**, the recall period was 3 months. A high score indicates more negative impact on QoL. The CPQ<sub>8–10</sub>**SF:8** and the CPQ<sub>11–14</sub>**SF:8** were filled out individually by children in group settings supervised by the researcher.

The CPQ also include two global ratings of the OHRQoL, the first addressing to the children's perceptions of their oral health (OH), and the second addressing the extent to which the oral/orofacial condition affected their overall well-being (OWB). CPQ<sub>8–10</sub> has a 4-point response format, ranging from “very good”=0 to “poor”=3 and from “not at all”=0 to “a lot”=3, for question 1 and 2, respectively. The CPQ<sub>11–14</sub> has a 5-point response ranging from excellent=0 to poor=4) for the OH, and from not at all=0 to very much=4 for the OWB.

### **Data analysis**

#### ***Statistical analysis***

Statistical analysis was performed using SPSS 20.0 (SPSS, Chicago, IL, USA) with a 5% significance level; normality was assessed using the Kolmogorov-Smirnov test. Since the score distributions were asymmetrical, non-parametric tests were applied. First, the data were analyzed by descriptive statistics. When appropriate, chi-square and Fisher's exact tests were

used to verify the sample association according to age-specific groups. Multiple logistic regression analyses using forward stepwise entry procedures were used to identify the items associated with the global ratings of OH in accordance with each oral clinical condition. Initially, all items were entered into the model and then the least significant items were regressively dropped until only those with  $p < 0.05$  remained in the model.

### ***Intra-examiner reliability***

Intra-examiner reliability calculations were performed two weeks later at the first test in 36 participants for the short forms. Reliability was assessed by computing the intra-class correlation coefficient (ICC), using the Cluster analysis of variance random effect parallel model [25]. The strength of the intra-examiner agreement was based on the following standards for ICC:  $<0.2$ , poor; 0.21-0.40, fair; 0.41-0.60, moderate; 0.61-0.80, substantial and 0.81-1.0, excellent to perfect [26].

The Kappa statistic (Cohen's Kappa,  $\kappa$ ) was computed to assess the reliability by conducting replicated examinations for the analyses of oral health condition in 20 individuals two weeks later to minimize recall bias as a result of the first test. Kappa values above 0.8 were considered excellent; from 0.61 to 0.8, good; 0.41 to 0.6, acceptable; 0.21 to 0.40, regular; and below 0.20, fair [27].

### ***Validity***

Validity means that survey questions adequately measure (in reality) the concepts the researcher is attempting to measure.

Correlational construct validity was assessed by correlating the mean scores and global ratings of OH and OWB using Spearman's correlation coefficient.

### ***Internal reliability***

Reliability can be defined as a measure of the internal consistency or homogeneity of the items. Two measures were used for the analysis of internal reliability; the corrected item total correlation and the Cronbach's alpha coefficient [28]. Values above 0.2 for the former and 0.7 for the latter can be acceptable [29].

## RESULTS

### Sample characteristics

A sample association according socio-demographic characteristics by dichotomized age is shown in Table 1. The number of girls was significantly higher than boys, as well as the number of participants from public schools in relation to private ones. The race group more prevalent was “pardo”. Pardo is a mixed of black and white. The socioeconomic status more prevalent was “D” that the parents had a salary means of R\$ 776.00 Brazilian Real (approximately US\$ 300.00).

**Table. 1.** Association between socio-demographic characteristics by age group dichotomized (n=287)

| <u>Variables</u>            | (8-10 years)<br>(n) % | (11-14 years)<br>(n) % | <i>P</i> -value |
|-----------------------------|-----------------------|------------------------|-----------------|
| <b>Gender</b>               |                       |                        |                 |
| Boys                        | (49) 40.8             | (71) 59.2              | 0.03            |
| Girls                       | (89) 53.3             | (78) 46.7              |                 |
| <b>Type of school</b>       |                       |                        |                 |
| Private                     | (46) 60.5             | (30) 39.5              | 0.01            |
| Public                      | (92) 43.6             | (119) 56.4             |                 |
| <b>Race</b>                 |                       |                        |                 |
| White                       | (33) 56.9             | (25) 43.1              | 0.09            |
| “Pardo”                     | (89) 48.4             | (95) 51.6              |                 |
| Black                       | (16) 35.6             | (29) 14.9              |                 |
| <b>Socioeconomic status</b> |                       |                        |                 |
| A                           | (2) 50.0              | (2) 50.0               | 0.05            |
| B                           | (20) 58.8             | (14) 41.2              |                 |
| C                           | (14) 50.0             | (14) 50.0              |                 |
| D                           | (60) 50.4             | (59) 49.6              |                 |
| E                           | (25) 32.1             | (53) 67.9              |                 |

*P*-value obtained from Chi-square test

Intra-examiner reliability presented excellent agreement for all oral health conditions with Cohen’s Kappa ranging from 0.81 to 0.96, confirming that the examiner was able to perform the epidemiological study (Table 2).

**Table 2.** Intra-examiner reliability of clinical examinations of oral health conditions

| <u>Oral health conditions (n=20)</u> | <u>Reliability</u> |
|--------------------------------------|--------------------|
| dmft/DMFT                            | 0.96               |
| Gingivitis                           | 0.91               |
| Dental Fluorosis                     | 0.94               |
| Anterior maxillary overjet (>3mm)    | 0.85               |
| Anterior open bite (>2mm)            | 0.84               |
| Deep overbite                        | 0.81               |
| Anterior/posterior crossbite         | 0.85               |
| Crowding (one or two segments)       | 0.92               |
| Spacing (one or two segments)        | 0.94               |

Cohen's Kappa – all showing excellent agreement

The overall scores of CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8** showed a normal distribution, with a mean score of  $8.8 \pm 6.6$  and  $10.2 \pm 6.0$ , respectively. Domain-specific scores showed large variations; for the CPQ<sub>8-10</sub>**SF:8** the highest mean score was for “oral symptoms” and the lowest was seen for “functional limitation” and for CPQ<sub>11-14</sub>**SF:8** the highest mean score was for “oral symptoms” and the lowest was seen for “social well-being” (Table 3).

**Table 3.** Means values for overall and domain-specific CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8**

|                                  |               | No. of Items | Mean $\pm$ SD  | Possible Range | Observed Range |
|----------------------------------|---------------|--------------|----------------|----------------|----------------|
| CPQ <sub>8-10</sub> <b>SF:8</b>  | Overall scale | 8            | 8.8 $\pm$ 6.6  | 0-32           | 0-31           |
|                                  | Domains       |              |                |                |                |
|                                  | OS            | 2            | 3.0 $\pm$ 2.1  | 0-8            | 0-8            |
|                                  | FL            | 2            | 1.6 $\pm$ 1.8  | 0-8            | 0-7            |
|                                  | EWB           | 2            | 2.4 $\pm$ 2.4  | 0-8            | 0-8            |
|                                  | SWB           | 2            | 1.8 $\pm$ 2.0  | 0-8            | 0-8            |
| CPQ <sub>11-14</sub> <b>SF:8</b> | Overall scale | 8            | 10.2 $\pm$ 6.0 | 0-32           | 0-28           |
|                                  | Domains       |              |                |                |                |
|                                  | OS            | 2            | 3.3 $\pm$ 1.8  | 0-8            | 0-7            |
|                                  | FL            | 2            | 2.6 $\pm$ 2.0  | 0-8            | 0-7            |
|                                  | EWB           | 2            | 2.6 $\pm$ 2.1  | 0-8            | 0-7            |
|                                  | SWB           | 2            | 1.8 $\pm$ 2.1  | 0-8            | 0-7            |

OS, oral symptoms; FL, functional limitation; EWB, emotional well-being; SWB, social well-being

Both questionnaires had a normal similar distribution. The global OH ratings of the CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8** were significantly correlated with the total scale and subscales of the respective short forms ( $p < 0.05$ ), as well as the OWB ( $p < 0.001$ ) (Table 4).

**Table 4.** Construct validity rank correlations between CPQ short form scores and global rating of Oral Health (OH) and Overall well-being (OWB)

|                        | CPQ <sub>8-10</sub> <b>SF:8</b> (n=138) |                |                |                | CPQ <sub>11-14</sub> <b>SF:8</b> (n=149) |                |                |                |
|------------------------|-----------------------------------------|----------------|----------------|----------------|------------------------------------------|----------------|----------------|----------------|
|                        | OH                                      |                | OWB            |                | OH                                       |                | OWB            |                |
|                        | r <sup>a</sup>                          | p <sup>b</sup> | r <sup>a</sup> | p <sup>b</sup> | r <sup>a</sup>                           | p <sup>b</sup> | r <sup>a</sup> | p <sup>b</sup> |
| Total scale            | 0.17                                    | 0.049          | 0.33           | <0.001         | 0.42                                     | <0.001         | 0.31           | <0.001         |
| Domains                |                                         |                |                |                |                                          |                |                |                |
| Oral symptoms          | 0.26                                    | 0.002          | 0.33           | <0.001         | 0.21                                     | 0.008          | 0.37           | <0.001         |
| Functional limitations | 0.17                                    | 0.041          | 0.40           | <0.001         | 0.28                                     | <0.001         | 0.38           | <0.001         |
| Emotional well-being   | 0.35                                    | <0.001         | 0.42           | <0.001         | 0.30                                     | <0.001         | 0.35           | <0.001         |
| Social well-being      | 0.24                                    | 0.004          | 0.29           | <0.001         | 0.18                                     | 0.027          | 0.29           | <0.001         |

<sup>a</sup> Spearman's correlation coefficient

<sup>b</sup> p-value

Cronbach's alpha coefficient for the CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>

**SF:8** total scales and the respective subscales indicated an acceptable to good level of internal reliability. Cronbach's alpha values for the CPQ<sub>8-10</sub>**SF:8** were higher than those for the CPQ<sub>11-14</sub>**SF:8** scale and subscales. Reproducibility and stability of the measures were confirmed by the ICC, demonstrating excellent correlations for the total and subscale scores on both questionnaires presented in Table 5.

**Table 5.** Reliability for total scale and domains

|             | CPQ <sub>8-10</sub> <b>SF:8</b> |                             |                      | CPQ <sub>11-14</sub> <b>SF:8</b> |                             |                      |
|-------------|---------------------------------|-----------------------------|----------------------|----------------------------------|-----------------------------|----------------------|
|             | Number of Items                 | Cronbach's $\alpha$ (n=138) | ICC (95% CI)* (n=36) | Number of Items                  | Cronbach's $\alpha$ (n=149) | ICC (95% CI)* (n=36) |
| Total Scale | 8                               | 0.78                        | 0.89 (0.80-0.94)     | 8                                | 0.75                        | 0.88 (0.77-0.95)     |
| Domains     |                                 |                             |                      |                                  |                             |                      |
| OS          | 2                               | 0.55                        | 0.88 (0.79-0.94)     | 2                                | 0.48                        | 0.90 (0.81-0.96)     |
| FL          | 2                               | 0.65                        | 0.89 (0.80-0.94)     | 2                                | 0.60                        | 0.91 (0.83-0.97)     |
| EW          | 2                               | 0.72                        | 0.89 (0.81-0.94)     | 2                                | 0.61                        | 0.91 (0.83-0.97)     |
| SW          | 2                               | 0.60                        | 0.89 (0.81-0.95)     | 2                                | 0.53                        | 0.92 (0.84-0.97)     |

OS, oral symptoms; FL, functional limitation; EWB, emotional well-being; SWB, social well-being

### **Discriminant construct validity**

#### ***Items associated with global ratings of oral health and overall well-being scores***

It was observed significant associations of global ratings of OH and OWB scores for the following variables: gender (CPQ<sub>8-10</sub>**SF:8**), dmft/DMFT>0 (CPQ<sub>11-14</sub>**SF:8**), gingivitis (CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8**), deep overbite, anterior/posterior crossbite and spacing respectively in the same group (CPQ<sub>11-14</sub>**SF:8**) ( $P<0.05$ ;  $P<0.001$ ) (Table 6).

**Table 6.** Association between gender and clinical conditions with global ratings of oral health (OH) and overall well-being (OWB) by age group

|                                                 | CPQ <sub>8-10</sub> <b>SF:8</b>                                         |                                                                                                 | CPQ <sub>11-14</sub> <b>SF:8</b>                                        |                                                                                                 |
|-------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                                 | OH                                                                      | OWB                                                                                             | OH                                                                      | OWB                                                                                             |
|                                                 | <i>Would you say the health of your teeth, lips, jaws and mouth is:</i> | <i>How much does the condition of your teeth, lips, jaws or mouth affect your life overall?</i> | <i>Would you say the health of your teeth, lips, jaws and mouth is:</i> | <i>How much does the condition of your teeth, lips, jaws or mouth affect your life overall?</i> |
|                                                 | Fair/Poor                                                               | A lot/Very much                                                                                 | Fair/Poor                                                               | A lot/Very much                                                                                 |
| <i>Gender</i>                                   |                                                                         |                                                                                                 |                                                                         |                                                                                                 |
| Male (%)                                        | 44.9                                                                    | 40.8                                                                                            | 49.3                                                                    | 26.8                                                                                            |
| Female (%)                                      | 42.2                                                                    | 21.1                                                                                            | 59.7                                                                    | 40.3                                                                                            |
| OR (95%CI)                                      | 1.11 (0.55–2.25)                                                        | 2.58 (1.20–5.52)                                                                                | 0.65 (0.34–1.26)                                                        | 0.54 (0.27–1.08)                                                                                |
| P-value                                         | 0.76 <sup>a</sup>                                                       | 0.01 <sup>a</sup>                                                                               | 0.20 <sup>a</sup>                                                       | 0.08 <sup>a</sup>                                                                               |
| <i>dmft/DMFT&gt;0(%)</i>                        | 47.6                                                                    | 28.6                                                                                            | 64.1                                                                    | 38.0                                                                                            |
| OR (95%CI)                                      | 1.6 (0.79–3.19)                                                         | 1.06 (0.50–2.28)                                                                                | 2.76 (1.39–5.48)                                                        | 1.68 (0.81–3.47)                                                                                |
| P-value                                         | 0.19 <sup>a</sup>                                                       | 0.87 <sup>a</sup>                                                                               | <0.001 <sup>a</sup>                                                     | 0.16 <sup>a</sup>                                                                               |
| <i>Gingivitis (%)</i>                           | 61.3                                                                    | 35.5                                                                                            | 68.5                                                                    | 40.7                                                                                            |
| OR (95%CI)                                      | 2.59 (1.14–5.88)                                                        | 1.58 (0.67–3.39)                                                                                | 2.47 (1.22–4.99)                                                        | 1.62 (0.80–3.26)                                                                                |
| P-value                                         | 0.02 <sup>a</sup>                                                       | 0.30 <sup>a</sup>                                                                               | 0.01 <sup>a</sup>                                                       | 0.17 <sup>a</sup>                                                                               |
| <i>Dental fluorosis (%)</i>                     | 50.0                                                                    | 13.6                                                                                            | 58.5                                                                    | 31.7                                                                                            |
| OR (95%CI)                                      | 1.39 (0.56–3.46)                                                        | 0.35 (0.09–1.27)                                                                                | 1.23 (0.60–2.57)                                                        | 0.88 (0.40–1.90)                                                                                |
| P-value                                         | 0.48 <sup>a</sup>                                                       | 0.10 <sup>a</sup>                                                                               | 0.56 <sup>a</sup>                                                       | 0.74 <sup>a</sup>                                                                               |
| <i>Facial trauma(%)</i>                         | 38.9                                                                    | 22.2                                                                                            | 58.8                                                                    | 32.4                                                                                            |
| OR (95%CI)                                      | 0.79 (0.36–1.71)                                                        | 0.67 (0.27–1.61)                                                                                | 1.24 (0.57–2.70)                                                        | 0.92 (0.41–2.08)                                                                                |
| P-value                                         | 0.55 <sup>a</sup>                                                       | 0.36 <sup>a</sup>                                                                               | 0.58 <sup>a</sup>                                                       | 0.84 <sup>a</sup>                                                                               |
| <i>Anterior maxillary overjet (&gt;3mm) (%)</i> | 44.4                                                                    | 27.8                                                                                            | 54.8                                                                    | 31.0                                                                                            |
| OR(95%CI)                                       | 1.07 (0.50–2.3)                                                         | 0.98 (0.42–2.29)                                                                                | 1.00 (0.49–2.05)                                                        | 0.84 (0.39–1.80)                                                                                |
| P-value                                         | 0.86 <sup>a</sup>                                                       | 0.96 <sup>a</sup>                                                                               | 0.99 <sup>a</sup>                                                       | 0.65 <sup>a</sup>                                                                               |
| <i>Anterior open bite (&gt;2mm) (%)</i>         | 39.1                                                                    | 30.4                                                                                            | 69.2                                                                    | 46.2                                                                                            |
| OR (95%CI)                                      | 0.81 (0.32–2.04)                                                        | 1.14 (0.43–3.05)                                                                                | 1.97 (0.58–6.70)                                                        | 1.77 (0.56–5.59)                                                                                |
| P-value                                         | 0.70 <sup>a</sup>                                                       | 0.78 <sup>a</sup>                                                                               | 0.27 <sup>a</sup>                                                       | 0.36 <sup>b</sup>                                                                               |
| <i>Deep overbite (%)</i>                        | 40.5                                                                    | 23.0                                                                                            | 46.6                                                                    | 23.3                                                                                            |
| OR (95%CI)                                      | 0.79 (0.40–1.55)                                                        | 0.58 (0.28–1.23)                                                                                | 0.52 (0.27–1.00)                                                        | 0.39 (0.19–0.78)                                                                                |
| P-value                                         | 0.50 <sup>a</sup>                                                       | 0.15 <sup>a</sup>                                                                               | 0.05 <sup>a</sup>                                                       | 0.17 <sup>a</sup>                                                                               |
| <i>Anterior/posterior crossbite (%)</i>         | 41.8                                                                    | 25.4                                                                                            | 62.3                                                                    | 39.0                                                                                            |
| OR (95%CI)                                      | 0.90 (0.46–1.76)                                                        | 0.77 (0.37–1.63)                                                                                | 1.90 (0.99–3.67)                                                        | 1.62 (0.81–3.25)                                                                                |
| P-value                                         | 0.75 <sup>a</sup>                                                       | 0.50 <sup>a</sup>                                                                               | 0.05 <sup>a</sup>                                                       | 0.17 <sup>a</sup>                                                                               |
| <i>Crowding (one or two segments) (%)</i>       | 57.3                                                                    | 31.7                                                                                            | 63.4                                                                    | 34.1                                                                                            |
| OR (95%CI)                                      | 1.82 (0.87–3.81)                                                        | 1.29 (0.58–2.85)                                                                                | 1.64 (0.78–3.43)                                                        | 1.02 (0.48–2.19)                                                                                |
| P-value                                         | 0.10 <sup>a</sup>                                                       | 0.54 <sup>a</sup>                                                                               | 0.19 <sup>a</sup>                                                       | 0.95 <sup>a</sup>                                                                               |
| <i>Spacing (one or two segments) (%)</i>        | 41.7                                                                    | 29.2                                                                                            | 78.9                                                                    | 42.1                                                                                            |
| OR (95%CI)                                      | 0.93 (0.38–2.26)                                                        | 1.06 (0.40–2.81)                                                                                | 3.58 (1.13–11.4)                                                        | 1.50 (0.56–4.02)                                                                                |
| P-value                                         | 0.87 <sup>a</sup>                                                       | 0.89 <sup>a</sup>                                                                               | 0.02 <sup>a</sup>                                                       | 0.41 <sup>a</sup>                                                                               |

P-value obtained from <sup>a</sup> Chi-square test and <sup>b</sup> Fisher's exact test  
OR=Odds Ratio CI=Confidence Interval



## Multiple logistic regression analysis

There were no multiple associations between clinical conditions and OH for CPQ<sub>8-10</sub>**SF:8** and OWB for both age groups in bivariate analysis. Thus, the model of multiple stepwise logistic regression analysis was built considering CPQ<sub>11-14</sub>**SF:8** with the variables significantly associated with OH in bivariate analysis, as follow: dmft/DMFT, gingivitis and deep overbite, anterior/posterior crossbite, spacing ( $P < 0.05$ ;  $P < 0.001$ ). The respective results are shown in Table 7.

**Table 7.** Multiple logistic regression: OR and 95% CI of the variables independently associated with CPQ<sub>11-14</sub>**SF:8** global ratings of oral health (OH) (n=148)

| <i>Dependent variable:</i>   | CPQ <sub>11-14</sub> <b>SF:8</b> (OH) | OR   | <i>P</i> | 95%CI      |
|------------------------------|---------------------------------------|------|----------|------------|
| <i>Independent variables</i> | Category                              |      |          |            |
| Dental caries experience     | dmft/DMFT $\geq$ 1                    | 2.05 | 0.06     | 0.97-4.33  |
| Gingivitis                   | Bleeding                              | 2.32 | 0.03     | 1.08-5.00  |
| Deep overbite                | Yes                                   | 0.57 | 0.13     | 0.28-1.98  |
| Anterior/posterior crossbite | Yes                                   | 1.81 | 0.10     | 0.87-3.77  |
| Spacing                      | One or two segments                   | 5.19 | 0.01     | 1.46-18.45 |

CPQ=Child perception questionnaire.

*P*-value obtained from Chi-square test.

OR=Odds Ratio.

CI=Confidence Interval.

## DISCUSSION

This study examined the OHRQoL of schoolchildren living in a northeast Brazilian region and it was undertaken to provide evidence of the reliability and validity of the CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> in short forms versions (CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8**), which consist the first stage of the process of evaluating OHRQoL measures [30]. Moreover, reliability and validity are the basic underpinnings of any scientific measure [27]. The second stage must consist of

on-going evaluations of the performance in different populations and the various contexts for which it was intended [30].

Furthermore, the CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8** exhibited satisfactory psychometric properties. In this research, the CPQ short forms versions detected that the subjective self-perceived oral health and clinical conditions have impacted negatively on the OHRQoL.

The results found in the present study provided evidence of the adequate construct validity of the Brazilian version short forms of the CPQ, because their scores were positively correlated with the two global ratings, OH and OWB. The respective coefficients were lower than the ones found for the long form of the CPQ<sub>8-10</sub> [12] for the two global ratings, whereas for long form of the CPQ<sub>11-14</sub> [3] the coefficient was similar for OH and lower for the OWB. Nevertheless, it must be considered that the long forms were applied in other population. It is known that content validity can be affected by reducing the number of questions in a questionnaire, but content relevance can remain intact [31], as seen in the present study, demonstrating the applicability of the CPQ short-forms in the population studied.

The reliability coefficients for the short forms and the respective ICC indicated perfect agreement. The domains showed lower values, being the oral symptoms in age range 11-14 years, the lowest. Consequently, these outcomes imply in probable limitations of the short-forms, agreeing with Jokovic *et al.* [31], and if an 8-item version is used, the analysis of overall scale scores can be more appropriate, since the analysis at the level of the individual domains can determine unreliable results, because the number of items per domain is insufficient for this purpose.

The findings of this study identified that OH of boys aged 8-10 years had negative impacted on daily activities, results opposite those found by Barbosa *et al.* (35) who observed the respective impact only in girls aged 11-14 years. Probably these studies show opposite results because the sociodemographic population is different in each other. Similarly, Bianco *et al.* (36) show evidence of female adolescents experiencing one or more of their daily activities impacted by their oral health. Preliminary studies have also demonstrated evidence that boys differ from girls in their social affinities and how they are influenced (37, 38).

The present research showed that schoolchildren age 11-14 with dental caries had worse perceptions of the impacts of oral health on their overall well-being than those without caries.

However, studies have indicated that dental caries does affect the quality of life in children age 8-10 [39, 40], and preadolescents age 11-14 [35], despite those studies used the different methodology of the present research. Moreover, the context of the population must be considered.

It was also found associations between gingival bleeding with global rating of OH, showing a negative impact. These results suggest that although participants in the gingival bleeding group may report higher impacts on QoL, their OH and OWB are not different compared to schoolchildren age 8-14 with more common oral conditions, such as the malocclusions (deep overbite, anterior/posterior crossbite and spacing). This finding is in agreement with Peres *et al.* (41) who observed that individuals with untreated dental caries, missing teeth, dental pain, malocclusion, and bleeding on probing presented more impact on quality of life compared to those without these outcomes. Though, facial trauma data must be interpreted with caution because was self-reported.

It was verified significant associations between types of malocclusion with self-perceived on OHRQoL, such as deep overbite, anterior/posterior crossbite and spacing among adolescent 11-14 years. Those variables can compromise esthetics, and thereby can influence the self-perception for facial appearance, determining negative impact on OHRQoL, agreeing with Sardenberg *et al.* [42], who reported that malocclusion, especially in the anterior teeth, can compromise a child's psychosocial well-being. According to Foster Page *et al.* [43], only the most severe malocclusions might be expected to produce effects in the physical functionality domains and the psychosocial characteristics were the most important contributors to OHRQoL in adolescents.

However, further research is necessary for the confirmation of these properties in other populations and settings. In addition, the variables associated with CPQ short form (SF:8) varied with clinical condition affecting children.

## CONCLUSION

The Brazilian versions of the short forms of the CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> (SF:8) demonstrated acceptable reliability and validity, thereby confirming the applicability of these

measures on Brazilian schoolchildren between 8-14 years of age. The psychometric properties were found to be satisfactory.

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### **REFERENCES**

1. Coste J, Guillemin F, Pouchot J, Fermanian J. Methodological approaches to shortening composite measurement scales. *J Clin Epidemiol.* 1997; 50(3): 247-52.
2. Baker SR. Testing a conceptual model of oral health: a structural equation modeling approach. *J Dent Res.* 2007; 86(8): 708-12.
3. Jokovic A1, Locker D, Tompson B, Guyatt G. Questionnaire for measuring oral health-related quality of life in eight- to ten-year-old children. *Pediatr Dent.* 2004; 26(6): 512-8.
4. Jokovic A, Locker D, Stephens M, Kenny D, Tompson B, Guyatt G. Validity and reliability of a questionnaire for measuring child oral-health-related quality of life. *J Dent Res.* 2002; 81(7): 459-63.
5. Barbosa TS, Tureli MCM, Gavião MB. Validity and reliability of the Child Perceptions Questionnaires applied in Brazilian children. *BMC Oral Health.* 2009; 9(13): 1-8.
6. Barbosa Tde S, Vicentin MD, Gavião MB. [Quality of life and oral health in children - Part I: Brazilian version of the Child Perceptions Questionnaire 8-10]. *Cien Saude Colet.* 2011; 16(10): 4077-85.
7. Barbosa Tde S, Gavião MB. [Quality of life and oral health in children - Part II: Brazilian version of the Child Perceptions Questionnaire]. *Cien Saude Colet.* 2011; 16(7): 3267-76.
8. Ramos-Jorge ML, Vieira-Andrade RG, Martins-Junior PA, Cordeiro MMR, Ramos-Jorge J, Paiva SM, Marques LS. Level of agreement between self-administered and

- interviewer-administered CPQ8–10 and CPQ11–14. *Community Dent Oral Epidemiol.* 2012; 40(3): 201-9.
9. Piovesan C, Antunes JLF, Guedes RS, Ardenghi TM. Impact of socioeconomic and clinical factors on child oral health-related quality of life (COHRQoL). *Qual Life Res.* 2010; 19(9): 1359–66.
  10. Paula SJ, Leite ICG, Almeida AB, Ambrosano BMB, Pereira AC, Mialhe FL. The influence of oral health conditions, socioeconomic status and home environment factors on schoolchildren's self-perception of quality of life. *Health Qual Life Outcomes.* 2012; 10(6): 1-19.
  11. Barbosa TS, Castelo PM, Leme MS, Gavião MBD. Associations between oral health-related quality of life and emotional status in children and preadolescents.. *Oral Dis.* 2012; 18(7): 639-47.
  12. Torres CS, Paiva SM, Vale MP, Pordeus IA, Ramos-Jorge ML, Oliveira AC, Allison PJ. Psychometric properties of the Brazilian version of the Child Perceptions Questionnaire (CPQ<sub>11-14</sub>) – short forms. *Health Qual Life Outcomes.* 2009; 7(43): 1-7.
  13. Instituto Nacional de Estudos e Pesquisa (INEP). 2009. [Acesso: 2012 jan 21]. Disponível: <http://www.inep.gov.br/>.
  14. Pesquisa Nacional de Saúde Bucal (SB Brasil). 2010. p. 1-118.
  15. Associação Brasileira de Estudos Populacionais (ABEP). Critério de Classificação Econômica Brasil. 2003; p.1-3.
  16. World Health Organization: Oral health surveys. Basic methods. Geneva: World Health Organization, 1997.
  17. Dean HT. The investigation of physiological effects by the epidemiological method. In: F.R. Moulton (Ed.), *Fluoride and dental health.* (pp. 23-31). Washington: American Association for Advancement of Science, 1942.
  18. Andreasen JO, Lauridsen E, Christensen SSA. Development of an Interactive Dental Trauma Guide. *Pediatr Dent.* 2009; 31(2): 133-6.

19. Foster TD, Hamilton MC. Occlusion in the primary dentition: study of children at 2 and one-half to 3 years of age. *Br Dent J.* 1969; 126(2): 76-9.
20. Grabowski R, Stahl F, Gaebel M, Kundt G. Relationship between occlusal findings and orofacial myofunctional status in primary and mixed dentition. Part I: Prevalence of malocclusions. *J Orofac Orthop.* 2007; 68(1): 26-37.
21. Sousa RV, Pinto-Monteiro AKA, Martins CC, Granville-Garcia AF, Paiva SM. Malocclusion and socioeconomic indicators in primary dentition. *Braz Oral Res.* 2014; 28(1): 54-60.
22. Farsi MA and Salama FS. Characteristics of primary dentition in group of Saudi children. *Int J Paediatr Dent.* 1996; 6(4): 253-9.
23. Otuyemi OD, Sote EO, Isiekwe MC, Jones SP. Occlusal relationship and spacing or crowding of teeth in the dentitions of 3-4 years-old Nigerian children. *Int J Paediatr Dent.* 1997; 7(3): 155-60.
24. Hedge S, Panwar S, Bolar DR, Sanghavi MB. Characteristics of occlusion in primary dentition of preschool children of Udaipur, India. *Eur J Dent.* 2012; 6(1): 51-5.
25. Cohen J: A coefficient of agreement for nominal scales. *Educ Psychol Measurement.* 1960, 20: 37-46.
26. Shrout PE, Fleiss JL: Intraclass correlation: uses in assessing rater reliability. *Psych Bull.* 1979; 86: 420-8.
27. Kramer MS, Feinstein AR: The biostatistics of concordance. *Clin Pharmacol Ther.* 1981; 29:111-23.
28. Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika.* 1951; 16: 297-334.
29. Streiner DL, Norman GR: Health measurement scales. A practical guide to their development and use. New York: Oxford University Press; 2000.
30. Locker D, Allen PF. Developing short-form measures of oral health-related quality of life. *J Public Health Dent.* 2002; 62(1): 13-20.

31. Jokovic A, Locker D, Guyatt G. Short forms of the Child Perceptions Questionnaire for 11–14-year-old children (CPQ11–14): Development and initial evaluation. *Health Qual Life Outcomes*. 2006; 4(4): 1-9.
32. Dworkin SF, LeResche L, DeRouen T, Von Korff M. Assessing clinical signs of temporomandibular disorder: reliability of clinical examiners. *J Prosthet Dent*. 1990; 63(5): 574-9.
33. List T, John MT, Dworkin SF, Svensson P. Recalibration improves inter-examiner reliability of TMD examination. *Acta Odontol Scand*. 2006; 64(3): 146-52.
34. Steenks MH, de Wijer A. Validity of the Research Diagnostic Criteria for Temporomandibular Disorder Axis I in clinical and research settings. *J Orofac Pain*. 2009; 23(1): 9-16.
35. Barbosa TS, Leme MS, Castelo PM, Gavião MBD. Factors associated with oral health-related quality of life in children and preadolescents. [cap 3 tese]. Piracicaba: Universidade Estadual de Campinas, Faculdade de Odontologia de Piracicaba; 2011 [access 2013 Abr 18]. Available in: <http://www.bibliotecadigital.unicamp.br/document/?code=000836040>
36. Bianco A, Fortunato L, Nobile CG, Pavia M.. Prevalence and determinants of oral impacts on daily performance: results from a survey among school children in Italy. *Eur J Public Health*. 2010; 20(5): 595-600.
37. Phillipsen LC. Associations between age, gender, and group acceptance and three components of friendship quality. *J Early Adolesc*. 1999; 19(4): 438-64.
38. Colarossi LG, Eccles JS. A prospective study of adolescents' peer support: Gender differences and the influence of parental relationships. *J Youth Adolesc*. 2000; 29(6): 661-78.
39. Low W, Tan S, Schwartz S. The effect of severe caries on the quality of life in young children. *Pediatr Dent*. 1999; 21(6): 325-6.

40. Peres KG, Latorre MRDO, Peres MA, Panizzi M. Impact of dental caries and dental fluorosis on 12-year-old schoolchildren's self-perception of appearance and chewing. *Cad. Saúde Pública*. 2003; 19(1): 323-30.
41. Peres KG, Cascaes AM, Leão AT, Côrtes MI, Vettore MV. Aspectos sociodemográficos e clínicos da qualidade de vida relacionada à saúde bucal em adolescentes. *Rev Saúde Pública*. 2013; 47(3): 19-28.
42. Sardenberg F, Martins MT, Bendo CB, Pordeus IA, Paiva SM, Auad SM, Vale MP. Malocclusion and oral health-related quality of life in Brazilian school children. *Angle Orthod*. 2013; 83(1): 83-9.
43. Foster Page LA, Thomson WM, Ukra A, Farella M. Factors influencing adolescents' oral health-related quality of life (OHRQoL). *Int J Paediatr Dent*. 2013; 23(6): 415-23.



## CAPÍTULO 2

**Socioeconomic status, oral conditions and oral habits related to quality of life in Brazilian schoolchildren from Fortaleza, CE, Brazil**

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## ABSTRACT

**Objectives:** To investigate the influence of socioeconomic status (SES), oral conditions, and oral habits on subjective self-perceptions about oral health-related quality of life (OHRQoL) using the Brazilian Portuguese short versions of the Child Perceptions Questionnaire (CPQ) for schoolchildren eight to ten (CPQ<sub>8-10</sub>) and eleven to fourteen years (CPQ<sub>11-14</sub>). **Methods:** Data were collected in public (n=73.5%) and private schools in the city of Fortaleza-Ce, Brazil (n=287, aged 8–14 years, mean age: 10.6 ± 1.7 years, 58.2% female). Data about oral habits were collected using a structured questionnaire answered by the schoolchildren and they were clinically examined for the presence or absence severity of the following conditions, according to the methodology set forth by the World Health Organization (WHO 1997): dental caries; malocclusion – overjet (>3mm), anterior open bite, deep overbite, posterior cross bite, crowding; gingivitis; fluorosis and facial trauma. SES was based on family income according to the Brazilian Association of Population Studies (ABEP) criteria. The Chi-square test was used to measure the risk estimate between socioeconomic status, self-perceived oral health and OHRQoL and logistic multiple regression was performed, considering as the dependent variable caries prevalence and as independent the variables gender, age and type of school (private vs. public). **Results:** Both age-specific questionnaires detected differences in the self-perceived impact of gingivitis on quality of life, with the greatest scores in the expected direction ( $p=0.02$ ;  $p=0.01$ ), respectively. Higher impacts on OHRQoL were observed for children 11–14 years of age with untreated dental caries ( $p=0.03$ ). The oral habit of finger sucking among children 8–10 years old was significantly related to higher scores of the CPQ<sub>8-10</sub> short form ( $14.4 \pm 10.1$ ). The logistic regression model indicated that children in public schools with a low SES were 3.7 times more likely to have caries than those who studied in private schools and were significantly better off economically. **Conclusion:** The findings from the present study support the evidence that some clinical conditions (caries and gingivitis), oral habits (finger sucking) and socioeconomic status had significant impact on schoolchildren's oral health-related quality of life, demonstrating the need to consider these factors when planning oral health strategies applicable to this population.

**Key words:** Child. Adolescent. Socioeconomic status. Oral health.

## INTRODUCTION

The evaluation of oral health-related quality of life (OHRQoL) has become a regular component of epidemiological studies. Clinical disease and psychosocial measurements have been used for the investigation of oral diseases and disorders (1). Children with poor oral health habits are more likely to develop dental caries when compared with those who have favorable habits (2)

Caries constitutes the single most common chronic disease of childhood; according with National Research of Oral Health (SB Brazil 2010) (4), the mean number of decayed, missing or filled teeth due to caries (dmft/DMFT) of schoolchildren aged 8-14 years from Fortaleza-Ce Brazil is 1.33 and the caries prevalence is 58.4%. Socioeconomic and racial disparities occur in the incidence and severity of childhood dental caries in virtually every country of the world (5, 6, 7) and in Fortaleza-Ce Brazil it is not different. The circumstances by which socioeconomic status (SES) is linked to dental health have been the focus of several studies (8). In this context, since Fortaleza city has 119 neighborhoods, the socioeconomic disparities are showed by a great variability in the Human Development Index (HDI), ranging from 0.119 to 0.953 and a mean of 0.754 (3).

According to Cortellazzi *et al.* (9), another important aspect in the epidemiology of caries is the study of variables that may influence its occurrence and severity. Moreover, in such an epidemiological context, the understanding of socioeconomic and clinical factors associated with child oral health-related quality of life (OHRQoL) may contribute to a full evaluation of treatment outcomes and to the definition of groups with higher levels of need, thus informing public health programs (10).

In general, the association between quality of life and oral health is measured by questionnaires properly validated for this purpose, such as the Child Perceptions Questionnaire (CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub>), which evaluate the following subjective aspects: oral symptoms (OS), functional limitations (FL), emotional well-being (EWB), and social well-being (SWB). Recently, the short forms versions of CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> have been developed for reducing the time and financial costs of data collection and the risk of total and item non-response (11).

In Brazil, only three studies in the southeast with different socio-demographic characteristic of the populations (10, 12, 13), evaluated the impact of socioeconomic factors,

especially mothers' education, on OHRQoL. The studies found that children with parents earning a low income and with only one adult in the household reported increased negative impact on their OHRQoL.

However, the impact of children's home environment, such as family structure, number of adults in the household and household income on the CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> indices has not yet been investigated in the northeast of Brazil. Socio-environmental aspects present different impacts on the OHRQoL as well. Paula *et al.* (13) found that the evaluation of the association between socio-environmental factors and OHRQoL is very important for oral health promotion planning, including intersectorial actions directed towards creating a healthy psychosocial environment for children.

Moreover, there is evidence of the importance of understanding the individual and ambient factors that influence the relationship between orofacial function and health/quality of life. Children are affected by numerous oral and orofacial disorders (e.g., dental caries, malocclusion), all of which have the potential to compromise functioning, well-being and OHRQoL. Orofacial dysfunctions also include the presence of oral habits, which are the main functional factors that influence the development of malocclusion (14).

This study aimed to investigate the impact of clinical oral health conditions, oral habits, socioeconomic status and subjective self-perceptions on OHRQoL in schoolchildren from public and private schools in Fortaleza, CE, Brazil.

## **MATERIALS AND METHODS**

### **Participants**

A total of 287 students (120 boys and 167 girls) were selected from public and private schools of Fortaleza city, Ceará, Brazil. The sample size was calculated based on caries experience previously reported (15). Considering the DMFT of 1.33, standard deviation (SD) of 1.94, admitting a sampling error of 20%, and a confidence level of 90%, the minimal sample size was defined as 263 individuals.

The inclusion criteria consisted of students with from 8–14 years of age, who have been living in Fortaleza – Ce, Brazil and obtained parental consent. The exclusion criteria were children with neurological or psychiatric disorders and use of dental prostheses. Moreover,

those have not answered the structured questionnaire about socio-demographic characteristics and oral habits were also excluded.

This study was approved by the Research Ethics Committee of the Piracicaba Dental School, University of Campinas (protocol number 015/2013).

### **Demographic and socioeconomic characteristics, oral hygiene habits, dental history and deleterious oral habits**

Data were collected using a structured questionnaire answered by schoolchildren. This questionnaire evaluated socio-demographic characteristics (age, gender and race), dental service utilization (ever gone to the dentist) and the student's oral hygiene habits (tooth brushing frequency, dental floss and mouthwash use and frequency, respectively). The types of deleterious oral habits asked about and recorded were: nail biting, lip biting or sucking, finger sucking, pacifier sucking, bottle sucking, tooth grinding, the presence of an habit was recorded for the answer "yes".

The criteria for SES and the clinical oral and occlusal assessments were previously described (Chapter 1). Briefly, the criteria of the Brazilian Association of Population Studies (ABEP) were used for SES classification (levels A1, A2, B1, B2, C, D and E, with A being the highest and E the lowest SES group), considering the household income and amenities, and parent(s)'s education (15). This ABEP questionnaire answered by the parent/caregiver on behalf of the child. In addition, the variable type of school was considered for reflecting also the SES in this population.

During the clinical oral examination, dental caries, malocclusion, gingivitis, dental fluorosis, and dentalfacial trauma were verified according to the criteria set forth by the WHO (16) by a calibrated examiner (F.D.S.F.). Dental caries was quantified using the sum of decayed, missing, and filled primary (dmft) and permanent teeth (DMFT) (16). The Community Periodontal Index (CPI) and Dean's index (DI) were applied for gingivitis and dental fluorosis assessment, respectively (17). The classification for facial trauma followed the criterion used for the Andreasen (18).

The occlusal assessment was carried out with the teeth in centric occlusion, recording (19, 20):

- overbite (normal: 0-2 mm, deep overbite: > 2mm);

- overjet (normal: 0-3 mm; increased overjet: > 3 mm; anterior crossbite: < 0 mm);
- anterior open bite (absence of contact between anterior teeth when posterior teeth were in occlusion);
- posterior crossbite (upper posterior teeth occluding in lingual relationship to lower ones);
- presence or absence of physiologic spaces;
- crowding (single-segment, in one arch only or two segments (in both arches) (21).

When at least one of the aforementioned conditions was present, malocclusion was characterized.

### **Oral health-related quality of life**

Data were collected using the Brazilian Portuguese short versions of the Child Perceptions Questionnaire for age 8–10 years (CPQ<sub>8-10</sub>**SF:8**) and 11–14 years (CPQ<sub>11-14</sub>**SF:8**), composed of eight self-completed questions each one, using a five point Likert-type scales with options from “never” to “everyday or almost everyday” and the scores ranging from 0 to 4, respectively. The recall period is four weeks for CPQ<sub>8-10</sub> **SF:8** and three months for CPQ<sub>11-14</sub> **SF:8**. The domains are oral symptoms, functional limitations, emotional well-being and social well-being. Both questionnaires include global ratings of the child’s oral health and extent to which the oral/orofacial condition affected his/her overall well-being (OHRQoL), with a 4 and 5-point response format, respectively (22). High scores indicate a higher negative impact on QoL. Participants filled out the questionnaires in group settings supervised by the researcher.

### **Data analysis**

Statistical analysis was performed using SPSS 20.0 (SPSS, Chicago, IL, USA) with a 5% significance level.

CPQ<sub>8-10</sub>**SF:8** and CPQ<sub>11-14</sub>**SF:8** for overall scores for each participant were calculated by summing the response codes for the 8 items. Simple descriptive statistics were generated and bivariate analyses were used to assess the associations among SES, CPQ global rating, the clinical measures of oral diseases/disorders and the socio-demographic characteristics of the schoolchildren. The Chi-squared test was used to assess the significance of those associations.

Independent sample t-test was used to assess the independent effects of the oral habits on the CPQ scores as dependent variables. Logistic regression model was applied to assess the association of caries prevalence, as dependent variable, and gender, age, and type of school as independent ones. Caries prevalence was used as dependent variable because it was the most prevalent oral condition in the present study. Initially, all items were entered into the model and then the least significant items were regressively dropped until only those with  $p < 0.05$  remained in the model. The A1 and A2, B1 and B2 SES levels were pooled into A and B levels, respectively.

## RESULTS

Of the participants, 211 (73.5%) were from public school and 167 (58.2%) were girls. The mean dmft/DMFT index value was 1.33 and caries prevalence was 61.3% (Table 1).

**Table 1.** Summary data on sample characteristics (n=287)

|                                              |                  | N   | %    |
|----------------------------------------------|------------------|-----|------|
|                                              | <u>Variables</u> |     |      |
| Gender                                       | Male             | 120 | 41.8 |
|                                              | Female           | 167 | 58.2 |
| Type of school                               | Public           | 211 | 73.5 |
|                                              | Private          | 76  | 26.5 |
| Age (Mean 10.6±1.7 years)                    | 8–10 years       | 138 | 48.1 |
|                                              | 11–14 years      | 149 | 51.9 |
| Socioeconomic status                         | A                | 4   | 1.4  |
|                                              | B                | 34  | 11.8 |
|                                              | C                | 28  | 9.8  |
|                                              | D                | 119 | 41.5 |
|                                              | E                | 78  | 27.2 |
|                                              | Missing          | 24  | 8.4  |
| Parent's marital status                      | Single           | 10  | 3.5  |
|                                              | Marriage         | 136 | 47.4 |
|                                              | Divorce          | 129 | 44.9 |
|                                              | Widower          | 12  | 4.2  |
| Dental caries experience<br>(Mean 1.33±1.94) | dmft /DMFT = 0   | 111 | 38.7 |
|                                              | dmft /DMFT ≥ 1   | 176 | 61.3 |

Table 1 continued

|                                  |                                   |     |      |
|----------------------------------|-----------------------------------|-----|------|
| Fluorosis                        | None                              | 224 | 78.0 |
|                                  | Very mild/Mild                    | 63  | 22.0 |
| Gingivitis                       | No bleeding                       | 202 | 70.4 |
|                                  | Bleeding                          | 85  | 29.6 |
| Dentofacial trauma               | Without                           | 217 | 75.6 |
|                                  | With                              | 70  | 24.4 |
| Occlusion                        | Anterior maxillary overjet (>3mm) | 78  | 27.2 |
|                                  | Anterior open bite (>2mm)         | 36  | 12.5 |
|                                  | Deep overbite                     | 147 | 51.2 |
|                                  | Anterior/posterior crossbite      | 144 | 50.2 |
|                                  | Crowding (one or two segments)    | 82  | 28.6 |
|                                  | Spacing (one or two segments)     | 43  | 15.0 |
| Type of oral habit               | Nail biting                       | 170 | 59.2 |
|                                  | Lip biting or sucking             | 100 | 34.8 |
|                                  | Finger sucking                    | 8   | 2.8  |
|                                  | Pacifier sucking                  | 3   | 1.0  |
|                                  | Tooth grinding                    | 33  | 11.5 |
|                                  | Bottle sucking                    | 3   | 1.0  |
| Frequency of daily toothbrushing | No toothbrushing                  | 4   | 1.4  |
|                                  | ≤ Twice a day                     | 105 | 36.6 |
|                                  | > Twice a day                     | 178 | 62.0 |
| Dental Floss                     | No                                | 194 | 67.6 |
|                                  | One or more times a day           | 89  | 31.0 |
|                                  | Missing                           | 4   | 1.4  |
| Mouthwashes                      | No                                | 181 | 63.1 |
|                                  | One or more times a day           | 103 | 35.9 |
|                                  | Missing                           | 3   | 1.0  |
| Dental Visit                     | No                                | 106 | 36.9 |
|                                  | Yes                               | 176 | 61.3 |
|                                  | Missing                           | 5   | 1.7  |



Table 2 presents the sample distribution for oral conditions as a function of SES. Dental caries and excessive anterior/maxillary overjet (> 3mm) were significantly associated with SES. The total sample size was 263 for the independent variable SES because some parents did not answer the ABEP questionnaire or the children did not return it to the researcher.

**Table 2.** Association between oral health conditions and socioeconomic status ( n=263)

| <u>Oral health measure</u>        | A    |   | B    |    | C    |    | D    |    | E    |    | <i>P</i> -value |
|-----------------------------------|------|---|------|----|------|----|------|----|------|----|-----------------|
|                                   | %    | n | %    | n  | %    | n  | %    | n  | %    | n  |                 |
| dmft/DMFT>0                       | 50.0 | 2 | 35.3 | 12 | 46.4 | 13 | 68.1 | 81 | 67.9 | 53 | 0.003           |
| Gingivitis                        | 0.0  | 0 | 23.5 | 8  | 32.1 | 9  | 27.7 | 33 | 38.5 | 30 | 0.25            |
| Dental fluorosis                  | 50.0 | 2 | 20.6 | 7  | 17.9 | 5  | 21.8 | 26 | 25.6 | 20 | 0.63            |
| Facial trauma                     | 25.0 | 1 | 20.6 | 7  | 25.0 | 7  | 26.9 | 32 | 17.9 | 14 | 0.68            |
| Anterior maxillary overjet (>3mm) | 0.0  | 0 | 47.1 | 16 | 17.9 | 5  | 21.0 | 25 | 30.8 | 24 | 0.014           |
| Anterior open bite (>2mm)         | 0.0  | 0 | 14.7 | 5  | 3.6  | 1  | 10.1 | 12 | 16.7 | 13 | 0.31            |
| Deep overbite                     | 50.0 | 2 | 58.8 | 20 | 60.7 | 17 | 47.1 | 56 | 46.2 | 36 | 0.52            |
| Anterior/posterior crossbite      | 25.0 | 1 | 35.3 | 12 | 35.7 | 10 | 54.6 | 65 | 51.3 | 40 | 0.13            |
| Crowding (one or two segments)    | 25.0 | 1 | 17.6 | 6  | 28.6 | 8  | 31.9 | 38 | 28.2 | 22 | 0.61            |
| Spacing (one or two segments)     | 25.0 | 1 | 14.7 | 5  | 10.7 | 3  | 16.0 | 19 | 14.1 | 11 | 0.93            |

*P*-value obtained from Pearson Chi-Square test.

Table 3 shows that schoolchildren with 8-10 years-old with low socioeconomic status self-perceived negatively your oral health.

**Table 3.** Responses to the global rating of oral health and overall well-being by socioeconomic status (SES)

|                           |                            | SES   |   |      |    |      |    |      |    |      |    | <i>P</i> * |
|---------------------------|----------------------------|-------|---|------|----|------|----|------|----|------|----|------------|
|                           |                            | A     |   | B    |    | C    |    | D    |    | E    |    |            |
|                           |                            | %     | n | %    | n  | %    | n  | %    | n  | %    | n  |            |
|                           |                            |       |   |      |    |      |    |      |    |      |    |            |
| <u>Oral Health</u>        |                            |       |   |      |    |      |    |      |    |      |    |            |
| CPQ <sub>8-10</sub>       | Very good/good             | 50.0  | 1 | 50.0 | 10 | 64.3 | 9  | 63.3 | 38 | 34.6 | 9  | 0.15       |
|                           | Fair/poor                  | 50.0  | 1 | 50.0 | 10 | 35.7 | 5  | 36.7 | 22 | 65.4 | 17 |            |
| SF:8                      |                            |       |   |      |    |      |    |      |    |      |    |            |
| <u>Overall well-being</u> |                            |       |   |      |    |      |    |      |    |      |    |            |
|                           | Not at all/very little     | 100.0 | 2 | 70.0 | 14 | 85.7 | 12 | 65.0 | 39 | 76.9 | 20 | 0.43       |
|                           | Somewhat/ a lot/           | 0.0   | 0 | 30.0 | 6  | 14.3 | 2  | 35.0 | 21 | 23.1 | 6  |            |
| <u>Oral Health</u>        |                            |       |   |      |    |      |    |      |    |      |    |            |
| CPQ <sub>11-14</sub>      | Excellent/ very good/good  | 100.0 | 2 | 85.7 | 12 | 71.4 | 10 | 39.0 | 23 | 28.8 | 15 | <0.001     |
|                           | Fair/poor                  | 0.0   | 0 | 14.3 | 2  | 8.6  | 4  | 61.0 | 36 | 71.2 | 37 |            |
| SF:8                      |                            |       |   |      |    |      |    |      |    |      |    |            |
| <u>Overall well-being</u> |                            |       |   |      |    |      |    |      |    |      |    |            |
|                           | Not at all/very little     | 100.0 | 2 | 85.7 | 12 | 78.6 | 11 | 59.3 | 35 | 61.5 | 32 | 0.20       |
|                           | Somewhat/ a lot/ very much | 0.0   | 0 | 14.3 | 2  | 21.4 | 3  | 40.7 | 24 | 38.5 | 20 |            |

\**p*-value obtained from Pearson Chi-Square test.

Bivariate analyzes had significantly higher scores with ‘excellent/very good/good’ oral health impact on quality of life for the CPQ<sub>11-14</sub> **SF:8** with dmft/DMFT, gingivitis and dental visit presented self-perceived negatively impact on OHRQoL for the both questionnaire (Table 4). These global ratings were dichotomized.

**Table 4.** Bivariate analysis: associations between oral health measures, oral health habits and dental care with global rating of oral health

| Variable                            | Category                | Very good/<br>good                        |      | Excellent/<br>very good/good               |      |
|-------------------------------------|-------------------------|-------------------------------------------|------|--------------------------------------------|------|
|                                     |                         | CPQ <sub>8-10</sub> SF:8<br>(Oral Health) | P*   | CPQ <sub>11-14</sub> SF:8<br>(Oral Health) | P*   |
|                                     |                         | %                                         |      | %                                          |      |
| dmft/DMFT                           | =0                      | 44.3                                      | 0.19 | 60.7                                       | 0.03 |
|                                     | ≥1                      | 55.7                                      |      | 35.9                                       |      |
| Fluorosis                           | No                      | 86.1                                      | 0.48 | 74.6                                       | 0.56 |
|                                     | Yes                     | 13.9                                      |      | 25.4                                       |      |
| Gingivitis                          | No bleeding             | 84.8                                      | 0.02 | 74.6                                       | 0.01 |
|                                     | Bleeding                | 15.2                                      |      | 25.4                                       |      |
| Frequency of daily<br>toothbrushing | ≤ Twice a day           | 38.0                                      | 0.81 | 34.3                                       | 0.52 |
|                                     | > Twice a day           | 62.0                                      |      | 65.7                                       |      |
| Dental Floss                        | No                      | 63.6                                      | 0.06 | 69.7                                       | 0.55 |
|                                     | One or more times a day | 36.4                                      |      | 30.3                                       |      |
| Mouthwashes                         | No                      | 53.8                                      | 0.06 | 65.7                                       | 0.81 |
|                                     | One or more times a day | 46.2                                      |      | 34.3                                       |      |
| Dental Visit                        | No                      | 35.5                                      | 0.68 | 28.8                                       | 0.04 |
|                                     | Yes                     | 64.5                                      |      | 71.2                                       |      |

CPQ<sub>8-10</sub>SF:8 Oral Health dichotomized answered = Very good/good vs. fair/poor

CPQ<sub>11-14</sub>SF:8 Oral Health dichotomized answered = Excellent/very good/good vs. fair/poor

Nail biting was the most prevalent type of oral habit present in 59.2% of the sample as described in Table 1. Independent samples t-test was performed on the dependent variable CPQ short forms score and independent variable oral habit types, which were dichotomized (with vs. without habit). Only the CPQ<sub>8-10</sub>SF:8 confirmed significant association with the variable finger sucking (p=0.04) (Table 5). The oral habits “bottle sucking” and “pacifier sucking” were reported by only three children and were excluded from the analysis.

**Table 5.** Comparisons of the overall well-being scores between schoolchildren with and without deleterious oral habits

| <u>Type of oral habit</u> | <u>Overall well-being</u>                        |            |                                                   |            |
|---------------------------|--------------------------------------------------|------------|---------------------------------------------------|------------|
|                           | CPQ <sub>8-10</sub> <b>SF:8</b><br>Mean $\pm$ SD | <i>P</i> * | CPQ <sub>11-14</sub> <b>SF:8</b><br>Mean $\pm$ SD | <i>P</i> * |
| Nail biting               |                                                  |            |                                                   |            |
| With habit                | 8.9 $\pm$ 6.9                                    | 0.94       | 9.6 $\pm$ 5.9                                     | 0.11       |
| Without habit             | 8.8 $\pm$ 6.2                                    |            | 11.2 $\pm$ 6.2                                    |            |
| Lip biting or sucking     |                                                  |            |                                                   |            |
| With habit                | 11.1 $\pm$ 8.8                                   | 0.17       | 12.3 $\pm$ 7.1                                    | 0.07       |
| Without habit             | 8.6 $\pm$ 6.3                                    |            | 9.8 $\pm$ 5.7                                     |            |
| Finger sucking            |                                                  |            |                                                   |            |
| With habit                | 14.3 $\pm$ 10.1                                  | 0.04       | 4.0 $\pm$ 0.0                                     | 0.14       |
| Without habit             | 8.6 $\pm$ 6.3                                    |            | 10.3 $\pm$ 6.0                                    |            |
| Tooth grinding            |                                                  |            |                                                   |            |
| With habit                | 10.0 $\pm$ 6.9                                   | 0.38       | 10.7 $\pm$ 6.3                                    | 0.77       |
| Without habit             | 8.6 $\pm$ 6.6                                    |            | 10.2 $\pm$ 6.0                                    |            |

\**p*-value obtained from independent t-test.

The full logistic regression model showed a 260% increase in odds of prevalence of caries among public school compared with private school when other variables (gender and age) were included in the model. In addition, the reduced model indicated that children studying in a public school were 3.7 times more likely to have caries than those who study in private school (Table 6).

**Table 6.** Logistic regression models evaluating caries prevalence on gender, age and type of school

| <u>Variable</u>             | <u>d.f</u> | Full logistic regression model             | Reduced logistic regression model         |
|-----------------------------|------------|--------------------------------------------|-------------------------------------------|
|                             |            | <u>Adjusted OR (95% CI) <i>P</i>-value</u> | <u>Adjusted OR(95% CI) <i>P</i>-value</u> |
| Gender (male vs. female)    | 1          | 0.7 (0.43 – 1.19) 0.20                     |                                           |
| Age                         | 1          | 1.0 (0.87 – 1.21) 0.71                     |                                           |
| School (private vs. public) | 1          | 3.6 (2.04 – 6.45) <0.001                   | 3.7 (2.15 – 6.44) <0.001                  |

*P*-value obtained from Wald chi-square test.

OR=Odds Ratio

CI=Confidence Interval

## DISCUSSION

This cross-sectional study evaluated the relationship of clinical measures of oral health, socioeconomic status, oral habits, dental care and oral health-related quality of life, using the CPQ<sub>8-10</sub> and CPQ<sub>11-14</sub> short forms, in a population-based sample of 8–14 year-old schoolchildren in Fortaleza-CE, Brazil.

According to the descriptive data, the prevalence of dental caries in the population of this study was high, with 176 (61.3%) schoolchildren presenting the disease, suggesting a need to improve the access to the oral preventive and educational programs for the population studied. Barbosa *et al.* (23) showed that children, who present a higher rate of preventive dental behavior, may have higher expectations towards their oral health, which may be reflected in their self-perceived QoL ratings.

The schoolchildren with low SES have a significant poor oral health considering the dmft/DMFT and malocclusion, such as the anterior/maxillary overjet. Nevertheless, Piovesan *et al.* (10) and Paula *et al.* (13) investigated the negative impact of these variables on each of the health domains of CPQ<sub>11-14</sub>. In this context, the association between children's poor oral health and low SES of the family has been considered evident (2).

The forms of dental fluorosis found in the present study were mild or very mild, determining no impact on OHRQoL, corroborating the other study findings (24, 25). In fact, severe dental fluorosis can have a negative effect on smile esthetics and can produce functional problems and, consequently, could determine negative effects on OHRQoL and in quality of life in general, as previously observed (26, 27).

In this study, SES was not found to be a decisive factor in trauma occurrence, since there was no association between them, probably due to the fact that trauma was reported by schoolchildren. Though, the cultural and socioeconomic characteristics of the populations in the different countries have been considered as influence factors for dental trauma occurrence and for the associated factors (28). Berger *et al.* (29) showed that only severe dental injuries can affect negatively the QoL.

Statistically significant associations were found between anterior/maxillary overjet and SES, probably because the most significant impact of malocclusion on the QoL in this age

group is the psychosocial, as previously observed (30). However, the specific nature of the impact of malocclusion on some young people in terms of self-consciousness about the appearance of teeth has not been previously explored using a qualitative approach.

Scapini *et al.* (31) observed that independent of dental caries or traumatic dental injuries, the increased severity of malocclusion is associated with higher impact on OHRQoL and socioeconomic inequalities and clinical conditions represent important features of OHRQoL. Souza *et al.* (32) founded that malocclusion is not dependent on socioeconomic indicators and should be investigated in all children, regardless of social class. In addition, the present study showed that SES had negative impact on self-perceived on OHRQoL in schoolchildren of CPQ<sub>11-14</sub> **SF:8** group, affecting their daily activities.

Bivariate analyses were used to examine the associations between socio-demographic, oral health habits and dental caries with the CPQ oral health; the multiple logistic regression analysis was used to identify the independent variables associated with presence of caries. The results generated by these analyses provided preliminary evidence, suggesting that schoolchildren view their OHRQoL as global concepts, which are in agreement with the result previously observed (23, 34).

The findings showed that the finger sucking habit exerted a negative oral health impact in children aged from 8–10 years. Probably, this oral habit suffers psychological influence on activity daily owing the high age of children or emotional problems. But this result has interpreted with caution because only six schoolchildren aged from 8–10 years presented finger sucking habit. Deleterious oral habits may be related to emotional and/or psychological factors particularly nail biting, which was the most prevalent habit (21, 33).

Therefore, a more soundly based health educational program involving all family members are needed to provide parents with adequate guidance on how to maintain the oral health of their children. Because the findings of the present study and the above-mentioned studies were obtained from populations from different cultures and using distinct OHRQoL measures, the contradictory outcomes may be explained by the influence of cultural norms and the expectations on children's perception of their oral health and its effect on their QoL.

## CONCLUSION

The findings from the present study support the evidence that socioeconomic status and some oral conditions (caries and gingivitis) had significant impact on OHRQoL and type oral habits (finger sucking) was analyzed with caution, demonstrating the need to consider these conditions when planning oral health strategies applicable to schoolchildren.

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## REFERENCES

1. Foster Page LA, Boyd D, Thomson WM. Do we need more than one Child Perceptions Questionnaire for children and adolescents? BMC Oral Health. 2013; 13(26): 1-7.
2. Castilho AR, Mialhe FL, Barbosa Tde S, Puppim-Rontani RM. Influence of family environment on children's oral health: a systematic review. J Pediatr. 2013; 89(2): 116-23.
3. Prefeitura Municipal de Fortaleza. [acesso 2014 jun 22]. Disponível em: <http://www.fortaleza.ce.gov.br/noticias/sde/prefeitura-apresenta-estudo-sobre-desenvolvimento-humano-por-bairro>.
4. Pesquisa Nacional de Saúde Bucal (SB Brasil). 2010; 1-118.
5. Centers for Disease Control and Prevention. Fact sheet: surveillance for dental caries, dental sealants, tooth retention, edentulism and enamel fluorosise United States. 2006; 1988, 1994, 1999 and 2002.
6. Edelstein BL. The dental caries pandemic and disparities problem. BMC Oral Health. 2006; 6(Suppl 1), S2.
7. Donahue GJ, Waddell N, Plough AL, Del Aguila, MA, Garland TE. The ABCDs of treating the most prevalent childhood disease. Am J Public Health. 2005; 95(8): 1322-24.

8. Boyce WT, Den Besten PK, Stamperdahl J, Zhan L, Jiang Y, Adler NE, Featherstone JD. Social inequalities in childhood dental caries: the convergent roles of stress, bacteria and disadvantage. *Soc Sci Med*. 2010; 71(9): 1644-52.
9. Cortellazzi KL, Tagliaferro EPS, Assaf AV, Tafner APMF, Ambrosano GMB, Bittar TO, Meneghim MC, Pereira AC. Influência de variáveis socioeconômicas, clínicas e demográficas na experiência de cárie dentária em pré-escolares de Piracicaba, SP. *Rev Bras Epidemiol*. 2009; 12(3): 490-50.
10. Piovesan C, Antunes JLF, Guedes RS, Ardenghi TM. Impact of socioeconomic and clinical factors on child oral health-related quality of life (COHRQoL). *Qual Life Res*. 2010; 19(9): 1359–66.
11. Jokovic A, Locker D, Guyatt G. Short forms of the Child Perceptions Questionnaire for 11–14-year-old children (CPQ11–14): Development and initial evaluation. *Health Qual Life Outcomes*. 2006; 4(4): 1-9.
12. Paula SJ, Leite ICG, Almeida AB, Ambrosano BMB, Pereira AC, Mialhe FL. The influence of oral health conditions, socioeconomic status and home environment factors on schoolchildren's self-perception of quality of life. *Health Qual Life Outcomes*. 2012; 10(6): 1-19.
13. Paula JS, Leite IC, de Almeida AB, Ambrosano GM, Mialhe FL. The impact of socioenvironmental characteristics on domains of oral health-related quality of life in Brazilian schoolchildren. *BMC Oral Health*. 2013; 13(10): 2-8.
14. Leme MS, Souza Barbosa Td, Gavião MB. Relationship among oral habits, orofacial function and oral health-related quality of life in children. *Braz Oral Res*. 2013; 27(3): 272-8.
15. Associação Brasileira de Estudos Populacionais (ABEP). Critério de Classificação Econômica Brasil. 2003; p.1-3.
16. World Health Organization: Oral health surveys. Basic methods. Geneva: World Health Organization, 1997.
17. Dean HT. The investigation of physiological effects by the epidemiological method. In: F.R. Moulton (Ed.), *Fluoride and dental health*. Washington: American Association for Advancement of Science. 1942; 23-31.



18. Andreasen JO, Lauridsen E, Christensen SSA. Development of an Interactive Dental Trauma Guide. *Pediatr Dent*. 2009; 31(2): 133-36.
19. Foster TD, Hamilton MC. Occlusion in the primary dentition: study of children at 2 and one-half to 3 years of age. *Br Dent J*. 1969; 126(2): 76-9.
20. Grabowski R, Stahl F, Gaebel M, Kundt G. Relationship between occlusal findings and orofacial myofunctional status in primary and mixed dentition. Part I: Prevalence of malocclusions. *J Orofac Orthop*. 2007; 68(1): 26-37.
21. Hedge S, Panwar S, Bolar DR, Sanghavi MB. Characteristics of occlusion in primary dentition of preschool children of Udaipur, India. *Eur J of Dent*. 2012; 6(1); 51-55.
22. Barbosa TS, Tureli MCM, Gavião MBD: Validity and reliability of the Child Perceptions Questionnaires applied in Brazilian children. *BMC Oral Health*. 2009; 9(13): 1-8.
23. Barbosa TS, Leme MS, Castelo PM, Gavião MBD. Factors associated with oral health-related quality of life in children and preadolescents. [cap 3 tese]. Piracicaba: Universidade Estadual de Campinas, Faculdade de Odontologia de Piracicaba; 2011 [access 2013 Jun 19]. Available in: <http://www.bibliotecadigital.unicamp.br/document/?code=000836040>
24. Peres KG, Latorre MRDO, Peres MA, Traebert J, Panizzi M. Impact of dental caries and dental fluorosis on 12-year-old schoolchildren's self-perception of appearance and chewing. *Cad. Saude Publica*. 2003; 19(1): 323-30.
25. Chankanka O, Levy SM, Warren JJ, Chalmers JM. A literature review of aesthetic perceptions of dental fluorosis and relationships with psychosocial aspects/oral health-related quality of life. *Community Dent Oral Epidemiol*. 2010; 38(2): 97-109.
26. Riordan PJ. Perceptions of dental fluorosis. *J Dent Res*. 1993; 72(9): 1268-74.
27. Michel-Crosato E, Biazevic MG, Crosato E. Relationship between dental fluorosis and quality of life: a population based study. *Braz Oral Res*. 2005; 19(2): 150-55.
28. Feldens CA, Kramer PF, Fakhruddin KS, Al Kawas S. Socioeconomic status and traumatic dental injuries. *Dent Traumatol*. 2013; 29(3): 248-50.
29. Berger TD, Kenny DJ, Casas MJ, Barrett EJ, Lawrence HP. Effects of severe dentoalveolar trauma on the quality-of-life of children and parents. *Dent Traumatol*. 2009; 25(5): 462-69.

30. O'Brien K, Wright JL, Conboy F, Macfarlane T, Mandall N. The child perception questionnaire is valid for malocclusions in the United Kingdom. *Am J Orthod Dentofacial Orthop*. 2006; 129(4): 536–40.
31. Scapini A, Feldens CA, Ardenghi TM, Kramer PF. Malocclusion impacts adolescents' oral health-related quality of life. *Angle Orthod*. 2013; 83(3): 512-8.
32. Sousa RV, Pinto-Monteiro AKA, Martins CC, Granville-Garcia AF, Paiva SM. Malocclusion and socioeconomic indicators in primary dentition. *Braz Oral Res*. 2014; 28(1): 54-60.
33. Peres KG, Barros AJD, Anselmi L, Peres MA, Barros FC. Does malocclusion influence the adolescent's satisfaction with appearance? A cross-sectional study nested in a Brazilian birth cohort. *Community Dent Oral Epidemiol*. 2008; 36(2): 137-43
34. Rebok G, Riley A, Forrest C, Starfield B, Green B, Robertson J. Elementary school-aged children's reports of their health: a cognitive interviewing study. *Qual Life Res*. 2001; 10(1): 59-70.



## CONCLUSÃO

O presente trabalho visou analisar a qualidade de vida relacionada à saúde bucal e fatores associados em crianças e adolescentes. A partir dos resultados expostos chegou-se às seguintes conclusões:

1. As propriedades psicométricas dos questionários (CPQ<sub>8-10</sub> e CPQ<sub>11-14</sub>) na versão curta em escolares da região nordeste com diferentes níveis socioeconômicos mostraram-se válidas e confiáveis. A avaliação do impacto do nível socioeconômico e das condições clínicas bucais na qualidade de vida relacionada à saúde bucal desta população demonstrou-se importante, uma vez que foram encontrados impactos negativos significativos nos aspectos funcionais, emocionais e sociais destes indivíduos.
2. Os resultados encontrados estão de acordo com os modelos contemporâneos de saúde, os quais sugerem a influência de características pessoais e ambientais na percepção de saúde e bem-estar. Escolares com nível socioeconômico baixo e estado de saúde bucal precário incluindo cárie, gengivite e maloclusão, apresentaram maior comprometimento da qualidade de vida relacionada à saúde bucal.

## REFERÊNCIAS\*

- Aguilar-Díaz FC, Irigoyen-Camacho, ME, Borges-Yanez A. Oral-health related quality of life in schoolchildren in an endemic fluorosis area of Mexico. *Qual Life Res.* 2011; 20: 1699-706.
- Araujo AC, Gusmao ES, Batista JE, Cimoës R. Impact of periodontal disease on quality of life. *Quintessence Int.* 2010; 41: 111–118.
- Barbosa TS, Leme MS, Castelo PM, Gavião MBD. Evaluating oral health-related quality of life measure for children and preadolescents with temporomandibular disorder. *Health Qual Life Outcomes.* 2011; 9: 1-12.
- Barbosa TS, Gavião MBD. Oral health-related quality of life in children: Part I. How well do children know themselves? A systematic review. *Int J Dent Hygiene.* 2008; 6: 93-9.
- Barbosa TS, Gavião MDB. Oral health-related quality of life in children: Part III. Is there agreement between parents in rating their children's oral health-related quality of life? A systematic review *Int J Dent Hygiene.* 2008; 6: 108–3.
- Barbosa TS, Mialhe FL, Castilho ARF, Gavião MBD. Qualidade de vida e saúde bucal em crianças e adolescentes: aspectos conceituais e metodológicos. *Rev Saúde Col.* 2010; 20: 283-300.
- Barbosa TS, Tureli MC, Gavião MB. Validity and reliability of the Child Perceptions Questionnaires applied in Brazilian children. *BMC Oral Health.* 2009; 9(13): 1-8.
- Bathsheba J. Turton BJ, Thomson WM, Foster Page LA, Saub RB, Razak IA. Validation of an Oral Health-Related Quality of Life Measure for Cambodian Children. *Asia Pac J Public Health.* 2013; 4: 1-11.

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\* De acordo com a norma da UNICAMP/FOP, baseadas nas normas do International Committee of Medical Journals Editors. Abreviatura dos periódicos em conformidade com o Medline.

- Bekes K, John MT, Schaller HG, Hirsch C. The German version of the child perceptions questionnaire on oral health-related quality of life (CPQ-G11-14): population-based norm values. *J Orofac Orthop*. 2011; 72: 223-33.
- Berger TD, Kenny DJ, Casas MJ, Barrett EJ, Lawrence HP. Effects of severe dentoalveolar trauma on the quality-of-life of children and parents. *Dent Traumatol*. 2009; 5: 462-9.
- Broder HL. Children's oral health-related quality of life. *Community Dent Oral Epidemiol*. 2007; 35: 5-7.
- Brown A, Al-khayal Z. Validity and reliability of the Arabic translation of the childoral-health-related quality of life questionnaire (CPQ11–14) in Saudi Arabia. *Int J Paediatr Dent*. 2006; 16: 405–11.
- Chankanka O, Levy SM, Warren JJ, Chalmers JM. A literature review of aesthetic perceptions of dental fluorosis and relationships with psychosocial aspects/oral health-related quality of life. *Community Dent Oral Epidemiol*. 2010; 38: 97-109.
- Cortes MIS, Marcenes W, Sheiham A. Impact of traumatic injuries to the permanent teeth on the oral health-related quality of life in 12–14-year-old children. *Community Dent Oral Epidemiol*. 2002; 30: 193–8.
- Coste J, Guillemin F, Pouchot J, Fermanian J. Methodological Approaches to Shortening Composite Measurement Scales. *J Clin Epidemiol*. 1997; 50: 247-52.
- Do LG, Spencer AJ. Evaluation of oral health-related quality of life questionnaires in a general child population. *Community Dent Health*. 2008; 25: 205-10.
- Fakhruddin KS, Lawrence HP, Kenny DJ, Locker D. Impact of treated and untreated dental injuries on the quality of life of Ontario school children. *Dent Traumatol*. 2008; 24: 309–13.
- Filstrup SL, Briskie D, Fonseca M, Lawrence L, Wandera A, Inglehart MR. Early Childhood Caries and Quality of Life: Child and Parent Perspectives. *Pediatr Dent*. 2003; 25: 431-40.

- Fleck MPA. O instrumento de avaliação de qualidade de vida da Organização Mundial da Saúde (WHOQOL-100): características e perspectivas. *Ciência & Saúde Coletiva*. 2000; 5: 33-8.
- Foster Page LA, Thomson WM, Jokovic A, Locker D. Validation of the Child Perceptions Questionnaire (CPQ11–14). *J Dent Res*. 2005; 84: 649–52.
- French DJ, Carrol A, Christie MJ. Health-related quality of life in Australian children with asthma: lessons for the cross-cultural use of quality of life instruments. *Qual Life Res*. 1998; 7: 409–19.
- Gaspar T, Pais Ribeiro JL, Matos MG, Leal I. Promoção de qualidade de vida em crianças e adolescentes. *Psicologia, Saúde & Doenças*. 2008; 9: 55-71.
- Goursand D, Paiva SM, Zarzar PM, Ramos-Jorge ML, Cornacchia GM, Pordeus IA, *et al*. Crosscultural adaptation of the Child Perceptions Questionnaire 11–14 (CPQ11–14) for the Brazilian Portuguese language. *Health Qual Life Outcomes*. 2008; 6: 1-7.
- Johal A, Cheung MY, Marcene W. The impact of two different malocclusion traits on quality of life. *Br Dent J*. 2007; 202: E2.
- Jokovic A, Locker D, Guyatt G. Short forms of the Child Perceptions Questionnaire for 11–14-year-old children (CPQ11–14): Development and initial evaluation. *Health Qual Life Outcomes*. 2006; 4: 1-9.
- Jokovic A, Locker D, Stephens M, Kenny D, Tompson B, Guyatt G. Validity and reliability of a questionnaire for measuring child oral-health related quality of life. *J Dent Res*. 2002; 81: 459–3.

- Kolawole KA, Otuyemi OD, Oluwadaisi AM. Assessment of oral health-related quality of life in Nigerian children using the Child Perceptions Questionnaire (CPQ 11-14). *Eur J Paediatr Dent*. 2011;12: 55-9.
- Koposova N, Eriksen HM, Widström E, Eisemann M, Opravin A, Koposov R. Oral health-related quality of life among 12-year-olds in Northern Norway and North-West Russia. *Oral Health Dent Manag*. 2012; 11: 206-14.
- Lau AWH, Wong MCM, Lam KF, McGrath C. Confirmatory factor analysis on the health domains of the Child Perceptions Questionnaire. *Community Dent Oral Epidemiol*. 2009; 37: 163-0.
- Leme MS, Souza Barbosa Td, Gavião MB. Relationship among oral habits, orofacial function and oral health-related quality of life in children. *Braz Oral Res*. 2013; 3: 272-8.
- Locker D. Disparities in oral health-related quality of life in a population of Canadian children. *Community Dent Oral Epidemiol*. 2007; 35: 348-56.
- Low W, Tan S, Schwartz S. The effect of severe caries on the quality of life in young children. *Pediatric Dentistry*. 1999; 21: 325-6.
- Mansour ME, Kotagal U, Rose B, Ho M, Brewer D, Roy-Chaudhury A, *et al*. Health-related quality of life in urban elementary schoolchildren. *Pediatrics*. 2003; 111: 1372-81.
- Marcenes W. Prevalence and impact of Traumatic Dental Injury and Quality of Life, 2005. Available at: [http:// www.ucl.ac.uk/dph/festschrift/powerpoint/Wagner%20Marcenes](http://www.ucl.ac.uk/dph/festschrift/powerpoint/Wagner%20Marcenes).
- Marshman Z, Rodd H, Sterm M, Mitchell C, Locker D, Jokovic A, *et al*. An evaluation of the child perceptions questionnaire in the UK. *Community Dent Health*. 2005; 22: 151-5.
- McGrath C, Pang HN, Lo EC, King NM, Hägg U, Samman N. Translation and evaluation of a Chinese version of the Child Oral Health-related Quality of Life measure. *Int J Paediatr Dent*. 2008; 18: 267-74.



- Meneghim MC, Kozlowski FC, Pereira AC, Ambrosano GMB, Zuleica MA, Meneghim P. Classificação socioeconômica e sua discussão em relação à prevalência de cárie e fluorose dentária. *Ciência & Saúde Coletiva*. 2007; 12: 523-9.
- Meuleners LB, Lee AH, Binns CW, Lower A. Quality of life for adolescents: assessing measurement properties using structural equation modelling. *Qual Life Res*. 2003; 12: 283-0.
- Noro LRA, Roncalli AG, Mendes Júnior FIR, Lima KC. Incidência de cárie dentária em adolescentes em município do Nordeste brasileiro, 2006. *Cad. Saúde Pública*. 2009; 25: 783-90.
- O'Brien K, Wright JL, Conboy F, Macfarlane T, Mandalld N. The child perception questionnaire is valid for malocclusions in the United Kingdom. *Am J Orthod Dentofacial Orthop*. 2006; 129: 536-0.
- Pal DK. Quality of life assessment in children: a review of conceptual and methodological issues in multidimensional health status measures. *Epidemiol Community Health*. 1996; 50: 391-6.
- Paula JS, Leite IC, de Almeida AB, Ambrosano GM, Mialhe FL. The impact of socioenvironmental characteristics on domains of oral health-related quality of life in Brazilian schoolchildren. *BMC Oral Health*. 2013; 28: 13-10.
- Paula JS, Leite ICG, Almeida AB, Ambrosano GMB, Pereira AC, Mialhe FL. The influence of oral health conditions, socioeconomic status and home environment factors on schoolchildren's self-perception of quality of life. *Health Qual Life Outcomes*. 2012; 10: 1-19.
- Pereira GA, Neves AM, Trindade AC. Imunologia da cárie dentária. *Acta Med Port* . 2010; 23: 663-8.

- Satcher, Surgeon General's Report. Oral Health in America. Bethesda, MD, US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.
- Seidl EMF, Zannon CMLC. Qualidade de vida e saúde: aspectos conceituais e metodológicos. *Cad. Saúde Pública*. 2004; 20: 580-8.
- Tapsoba H, Deschamps JP, Leclercq MH. Factor analytic study of two questionnaires measuring oral healthrelated quality of life among children and adults in New Zealand, Germany and Poland. *Qual Life Res*. 2000; 9: 559–9.
- Theunissen NCM, Vogels TGC, Koopman HM, Verrips GHW, Zwinderman KAH, Verloove-Vanhorick SP, *et al*. The proxy problem: child report versus parent report in health related quality of life research. *Qual Life Res* 1998; 7: 387–97.
- Torres CS, Paiva SM, Vale MP, Pordeus IA, Ramos-Jorge ML, Oliveira AC, Allison PJ. Psychometric properties of the Brazilian version of the Child Perceptions Questionnaire (CPQ11–14) – short forms. *Health Qual Life Outcomes*. 2009; 7: 1-7.
- Traebert J, Lacerda JT, Thomson WM, Foster Page L, Locker D. Differential item functioning in a Brazilian–Portuguese version of the Child Perceptions Questionnaire (CPQ11-14). *Community Dent Oral Epidemiol*. 2010; 38: 129–5.
- Turton BJ, Thomson WM, Foster Page LA, Saub RB, Razak IA. Validation of an Oral Health-Related Quality of Life Measure for Cambodian Children. *Asia Pac J Public Health*. 2013; 4: 1-11.
- Wogelius P, Gjorup H, Haubek D, Lopez R, Poulsen S. Development of Danish version of child oral-health-related quality of life questionnaires (CPQ8–10 and CPQ11–14). *BMC Oral Health*. 2009; 9: 2-8.
- World Health Organization: Oral health surveys. Basic methods. Geneva: World Health Organization, 1997.

Zanatta FB, Ardenghi TM, Antoniazzi RP, Pinto TMP Rösing CK. Association between gingival bleeding and gingival enlargement and oral health-related quality of life (OHRQoL) of subjects under fixed orthodontic treatment: a cross-sectional study. *BMC Oral Health*. 2012; 12: 2-9.

# APÊNDICE 1

## TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

As informações contidas neste documento visam convidá-lo a autorizar, por escrito, a participação do menor \_\_\_\_\_, com pleno conhecimento da natureza dos procedimentos e riscos a que se submeterá o menor, com capacidade de livre arbítrio e sem qualquer coação.

Convido-o (a) a participar de forma livre, espontânea e esclarecida da pesquisa *“Influência de variáveis socioeconômicas no impacto da saúde bucal, na qualidade de vida e nos níveis salivares de cortisol e alfa-amilase de crianças e adolescentes”*. Os responsáveis pela pesquisa e pelas informações contidas neste “Termo de Consentimento Livre e Esclarecido (TCLE)” são as pesquisadoras **Profa. Dra. Maria Beatriz Duarte Gavião e Fabíola Diogo de Siqueira Frota**, e a que fará a apresentação e obtenção do consentimento aos participantes, objeto desse estudo, será **Fabíola Diogo de Siqueira Frota**, doutoranda do curso de Pós-Graduação em Odontologia, área de concentração Odontopediatria, da Faculdade de Odontologia de Piracicaba-UNICAMP.

### **1) Justificativa da pesquisa**

Justifica-se a realização desta pesquisa, pois ao longo das últimas duas décadas, tem havido considerável avanço nos estudos sobre saúde bucal relacionados à qualidade de vida em adultos. As crianças também são afetadas por inúmeras alterações como cárie, problemas gengivais, fluorose dentária, dores na face, problemas na posição dos dentes, traumas dentários os quais têm o potencial de comprometer o funcionamento, bem-estar e qualidade de vida. A qualidade de vida estando alterada, como por exemplo, a presença do estresse, a avaliação de hormônios presentes na saliva pode confirmar tal alteração.

Portanto, a detecção destas alterações pode contribuir com a melhora da qualidade de vida, pois se essas forem solucionadas, podem influenciar de modo positivo a vida da criança.

A criança será avaliada por meio de um curto questionário aplicado, em seguida por exame clínico extra e intra bucal que identificará a presença de alterações bucais e faciais. Após coletaremos saliva através de um rolo de algodão colocado na cavidade bucal e retirado após no máximo 5 minutos. A sua participação não é obrigatória. A qualquer momento ele(a) poderá desistir de participar e retirar seu consentimento. A recusa não trará nenhum prejuízo na relação com o pesquisador ou com a instituição. É preciso entender a natureza da participação de seu filho(a) e assinar este Termo de Consentimento Livre e Esclarecido (TCLE).

## **2) Procedimento do estudo**

Após concordar em participar deste estudo, seu filho(a) passará pelos seguintes procedimentos:

ANAMNESE – por meio de entrevista com a criança e o responsável, verificando-se: histórico médico, histórico dental e hábitos bucais deletérios.

EXAME CLÍNICO BUCAL – verificar-se-á as condições dos lábios, gengiva, língua, palato, freios labial e lingual e dentes presentes.

EXAME CLÍNICO DENTÁRIO – verificação de número de dentes cariados, perdidos, obturados e fluorose dentária, traumatismo dentário, maloclusões.

EXAME MORFOLÓGICO DA OCLUSÃO – para verificar a posição dos dentes, se estão em posição correta ou não, se os dentes inferiores se encaixam corretamente nos superiores.

AVALIAÇÃO DO NÍVEL SÓCIO-ECONÔMICO – Será aplicado um questionário específico aos pais que se baseia na acumulação de bens materiais, no poder aquisitivo e na escolaridade do chefe da família.

QUALIDADE DE VIDA - Para avaliar a percepção sobre a qualidade de vida as crianças responderão a Questionários curtos de Saúde Oral da Criança, um para as crianças com idade entre 8 e 10 anos e outro para as crianças com idade entre 11 e 14 anos. As crianças terão liberdade de responder as perguntas ou não, serão devidamente instruídas antes do preenchimento e esclarecidas quando surgirem dúvidas.

## COLETA DA SALIVA

Faremos a coleta da saliva para dosagem de dois hormônios, para verificar se a criança está influenciada por fatores que interferem no seu dia a dia, isto é, se a criança se sente estressada, nervosa, entre outros fatores emocionais. A coleta será realizada da seguinte forma:

Duas amostras de saliva serão coletadas às 8 horas e às 11 horas da manhã em todos os participantes. Para que a criança não permaneça muito tempo na consulta, de acordo com o horário da consulta, uma das coletas será realizada pelos responsáveis que serão devidamente instruídos e receberão o material necessário, que constará de um tubo de plástico, um rolo de algodão, um recipiente para guardar este conjunto e mantê-lo no refrigerador de casa para futura análise. Receberão também uma pinça para colocar e retirar o algodão da boca. Além disso, solicitaremos que uma hora antes das coletas não haja consumo de alimentos e bebidas. Também não deverá realizar exercícios físicos e não escovar os dentes pelo menos uma hora antes da coleta da saliva. Poderá apenas consumir água durante este tempo. A coleta da saliva consistirá na colocação de um rolo de algodão na cavidade bucal, o qual deverá permanecer o tempo suficiente para ficar embebido de saliva, tempo este que não excederá 5 minutos. Após este procedimento, o rolo de algodão será removido da cavidade bucal com a pinça e depositado no tubo plástico. Este tubo com o algodão embebido em saliva será colocado no recipiente fornecido e guardado em geladeira. Caso a criança estude no período da manhã, os exames serão realizados à tarde, mas as coletas de saliva deverão ser realizadas no período da manhã. Devido à idade das crianças que serão avaliadas, consideramos que elas já tenham capacidade de fazer a própria coleta, desde que devidamente instruídas. Ao chegar da escola, os recipientes deverão ser colocados no refrigerador e levados no momento da consulta, assim como a pinça clínica. Este tempo fora do refrigerador não interferirá na análise do hormônio.

### **3) Riscos e desconfortos**

Não há riscos previsíveis, pois os procedimentos são simples. A coleta da saliva é simples e não causa dor. O questionário será respondido pela criança, por meio de leitura e marcação das respostas, com liberdade de responder ou não. Os exames clínicos seguem os passos de rotina odontológica e as normas de limpeza e assepsia do ambiente odontológico e do

instrumental utilizado seguem as normas preconizadas na FOP-UNICAMP, portanto, serão rigorosamente seguidas.

#### **4) Benefícios**

As avaliações que serão realizadas permitirão o diagnóstico de possíveis alterações da cavidade bucal e de seus anexos. O voluntário portador destas alterações receberá informações e orientações em relação ao problema e ao tratamento, sendo informado quais profissionais estariam indicados. Dentro do campo de atuação da Odontologia, o voluntário receberá encaminhamento para consultas odontológicas na rede pública e ou particular de saúde, na cidade de Fortaleza, encaminhamento este baseado na classificação socioeconômica da família, de acordo com os critérios da Associação Brasileira de Estudos Populacionais (ABEP), sugerindo-se clínicas particulares para as classes mais favorecidas, A e B, e rede pública para as classes menos favorecidas, tendo os responsáveis livre arbítrio para optar pelo atendimento em qualquer das entidades sugeridas.

Garante-se que a participação na pesquisa não acarretará gastos aos voluntários, assim como em relação qualquer procedimento clínico para realização de possíveis intervenções clínicas.

#### **5) Métodos alternativos**

Não existem métodos alternativos para a obtenção das informações desejadas.

#### **6) Forma de acompanhamento e assistência**

Serão realizados contatos com as crianças para o agendamento, conforme explicado. O atendimento para a pesquisa será realizado na própria escola. Agendamentos extras serão efetuados por telefone, carta ou telegrama. As crianças que necessitarem de tratamento odontológico serão encaminhadas e atendidas pelas unidades básicas de saúde do município de Fortaleza ou em clínicas particulares, assim como convir para os pais ou responsáveis.

#### **7) Esclarecimentos**

Você e seu filho(a) receberão respostas a qualquer pergunta ou esclarecimento sobre qualquer dúvida à cerca dos procedimentos, riscos, benefícios, empregados neste documento e outros assuntos relacionados à pesquisa antes, durante ou após a realização da mesma. Também serão dadas informações sobre o diagnóstico das alterações detectadas, o prognóstico e o plano de tratamento que será instituído, de acordo com os critérios

adotados pelas disciplinas do Departamento de Odontologia Infantil da FOP-UNICAMP (Odontopediatria).

#### **8) Retirada do consentimento**

O responsável pela criança tem a liberdade de retirar o consentimento a qualquer momento e deixar de participar do estudo, sem qualquer prejuízo ao atendimento odontológico a que a criança está sendo ou será submetida, nem represálias de qualquer natureza.

#### **9) Sigilo dos dados**

As informações obtidas da participação neste estudo serão mantidas estritamente confidenciais, sendo que os resultados divulgados nunca identificarão a criança. Além dos profissionais de saúde que farão as avaliações, agências governamentais locais, O Comitê de Ética em Pesquisa da instituição onde o estudo está sendo realizado, podem precisar consultar os registros. A criança não será identificada quando o material de seu registro for utilizado, seja para propósitos de publicação científica ou educativa. Ao assinar este consentimento informado, você autoriza as inspeções nos registros da pesquisa.

#### **10) Despesas**

O voluntário não terá gastos ou cobranças na participação do estudo, ou para os atendimentos odontológicos quando necessários e requisitados.

#### **11) Previsão de indenização**

Não haverá indenização, pois a pesquisa não oferece riscos previsíveis. No entanto, os pesquisadores responsáveis se encontram comprometido Conselho Nacional de Saúde na observação e cumprimento das normas e diretrizes regulamentadoras da pesquisa em seres humanos.

#### **12) Critérios para suspender ou encerrar a pesquisa**

Não havendo riscos previsíveis a pesquisa só será encerrada quando as informações desejadas forem obtidas.

#### **13) Entrega do TCLE**

O responsável receberá uma cópia deste termo onde consta o telefone e o endereço do pesquisador principal, podendo tirar suas dúvidas sobre o projeto e sua participação agora ou qualquer momento. Caso você tenha mais perguntas sobre o estudo, por favor, faça os seguintes contatos:



**Dados dos pesquisadores**

Prof<sup>ª</sup>. Maria Beatriz Duarte Gavião

CD Fabíola Diogo de Siqueira Frota

Av. Limeira 901

CEP 13414-903/Piracicaba – SP

Tel: (19) 3412 5368 / 3412 5287 / 3412 5200

E-mail: [mbgaviao@fop.unicamp.br](mailto:mbgaviao@fop.unicamp.br)

Endereço: Rua: Visconde de Mauá n. 2470 atp 302

Bairro: Dionísio Torres CEP: 60126-161

Fortaleza - CE

**14) Declaração de consentimento**

Li as informações contidas neste documento antes de assinar este termo de consentimento. Declaro que fui informado(a) sobre os métodos, as inconveniências, riscos, benefícios e eventos adversos que podem vir a ocorrer em consequência os procedimentos.

Declaro que tive tempo suficiente para ler e entender as informações acima. Declaro também que toda a linguagem técnica utilizada na descrição deste estudo de pesquisa foi satisfatoriamente explicada e que recebi respostas para todas as minhas dúvidas. Confirmando também que recebi uma cópia deste formulário de consentimento. Compreendo que sou livre para retirar a criança do estudo em qualquer momento, se por minha vontade ou pela própria vontade da criança, sem perda de benefícios ou qualquer outra penalidade.

Dou meu consentimento de livre e espontânea vontade para o menor sob minha responsabilidade, sem reservas para participar como voluntário deste estudo.

-----

Nome do responsável (em letra de forma)

-----

Assinatura do responsável

-----

DATA

-----  
Assinatura do pesquisador

-----  
DATA

**ATENÇÃO:** A sua participação em qualquer outra pesquisa é voluntária. Em caso de dúvida quanto aos seus direitos, escreva para o Comitê de Ética em Pesquisa da FOP-UNICAMP. Endereço : AV: Limeira, 901-CEP: 13414-900 Piracicaba SP

Tel/Fax-CEP (0xx19) 3412-5349

Fax-FOP (0xx19) 3412-5218

E-mail: cep@fop.unicamp.br

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## APÊNDICE 2

### FICHA DE ANAMESE

DATA \_\_\_\_/\_\_\_\_/\_\_\_\_

ALUNO \_\_\_\_\_

#### 1. IDENTIFICAÇÃO

Nome \_\_\_\_\_

Data de nascimento \_\_\_\_/\_\_\_\_/\_\_\_\_ Idade \_\_\_\_ anos e \_\_\_\_ meses

Sexo: fem ☐mas ☐ Raça: branco ☐☐pardo ☐☐negro ☐

Endereço \_\_\_\_\_ Bairro \_\_\_\_\_

Cidade \_\_\_\_\_ CEP \_\_\_\_\_ Telefone \_\_\_\_\_

Pai \_\_\_\_\_

Estado civil: ☐solteiro ☐casado ☐divorciado ☐viúvo ☐outros

Mãe \_\_\_\_\_

Estado civil: ☐solteira ☐casada ☐divorciada ☐viúva ☐outros

Irmãos \_\_\_\_\_ Idades \_\_\_\_\_

Pediatra ou clínico responsável \_\_\_\_\_

História médica passada: \_\_\_\_\_

História médica atual:

PESO \_\_\_\_\_ Kg ALTURA \_\_\_\_\_ cm

MENARCA: ☐sim ☐não

Início; \_\_\_\_\_ anos

## 2. HÁBITOS

| TIPO                 | SIM | NÃO | FREQUÊNCIA |       |          |
|----------------------|-----|-----|------------|-------|----------|
|                      |     |     | ESPORÁDICO | NOITE | CONTÍNUO |
| Sucção digital       |     |     |            |       |          |
| Sucção de chupeta    |     |     |            |       |          |
| Sucção dos lábios    |     |     |            |       |          |
| Mordedura dos lábios |     |     |            |       |          |
| Mamadeira            |     |     |            |       |          |
| Onicofagia           |     |     |            |       |          |
| Bruxismo             |     |     |            |       |          |
| Interposição lingual |     |     |            |       |          |
| Deglutição atípica   |     |     |            |       |          |

Início (hábito) \_\_\_\_\_ Final (retirada do hábito) \_\_\_\_\_

Métodos usados para dominar os hábitos \_\_\_\_\_

## 3. AVALIAÇÃO PREVENTIVA

Pais ou responsáveis recebem ou já receberam atendimento odontológico:

☐sim ☐não

Tipo: Preventivo ☐ Curativo ☐

Higiene bucal: ☐sim ☐não

☐escova

Frequência: 1x \_\_\_\_\_ 2x \_\_\_\_\_ 3x ou mais \_\_\_\_\_

☐fio dental

Frequência: 1x \_\_\_\_\_ 2x \_\_\_\_\_ 3x ou mais \_\_\_\_\_

☐enxaguatório bucal ☐outros

Frequência: 1x \_\_\_\_\_ 2x \_\_\_\_\_ 3x ou mais \_\_\_\_\_

Dentifrício: ☐sim ☐não

Marca: \_\_\_\_\_

Responsável pela escovação: ☐pais ☐criança ☐ambos

Água fluoretada: ☐sim ☐não

## 5. HISTÓRIA DENTAL

Primeira visita ao dentista \_\_\_\_\_

Comportamento:

☐ colaborador ☐ colaborador com reservas ☐ não colaborador

Problemas manifestados:

☐ Cárie

☐ Dor : ☐ provocada ☐ espontânea

Frequência : ☐ diurno ☐ noturno ☐ ambos

Intensidade: ☐ leve ☐ moderada ☐ intensa

☐ Abscesso

☐ Dentes manchados

Traumatismo: ☐ sim ☐ não

Data do trauma \_\_\_\_/\_\_\_\_/\_\_\_\_ Data do atendimento \_\_\_\_/\_\_\_\_/\_\_\_\_

Local do acidente: \_\_\_\_\_

Como ocorreu o acidente: \_\_\_\_\_

Dentição: ☐ decídua ☐ mista ☐ permanente

Dentes envolvidos: \_\_\_\_\_

☐ Luxação ☐ Subluxação ☐ Luxação intrusiva

☐ Luxação extrusiva ☐ Luxação lateral ☐ Avulsão

Tipo de fratura:

☐ Esmalte ☐ Dentina ☐ Coronariorradicular

☐ Exposição pulpar ☐ Radicular

Envolvimento de tecido mole: ☐ sim ☐ não

Local: \_\_\_\_\_ Extensão: \_\_\_\_\_

Tipo: ☐ contusão ☐ abrasão ☐ laceração

Sequela do trauma: \_\_\_\_\_

# APÊNDICE 3

## FICHA CLÍNICA

FACULDADE DE ODONTOLOGIA DE PIRACICABA - UNICAMP  
Ficha de Avaliação de Saúde Bucal - OMS 1997

Ficha Nº \_\_\_\_\_ Nome \_\_\_\_\_ Série: \_\_\_\_\_ Examinador \_\_\_\_\_  
Sexo ☐ M ☐ F Idade \_\_\_\_\_ Nascimento \_\_\_\_/\_\_\_\_/\_\_\_\_ Data do Exame \_\_\_\_/\_\_\_\_/\_\_\_\_ Anotador \_\_\_\_\_  
Endereço \_\_\_\_\_ Bairro \_\_\_\_\_  
Escola \_\_\_\_\_ Período \_\_\_\_\_

|           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 16        | 15(55)    | 14(54)    | 13(53)    | 12(52)    | 11(51)    | 21(61)    | 22(62)    | 23(63)    | 24(64)    | 25(65)    | 26        |
| O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M |
|           |           |           |           |           |           |           |           |           |           |           |           |

  

|           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 46        | 45(85)    | 44(84)    | 43(83)    | 42(82)    | 41(81)    | 31(71)    | 32(72)    | 33(73)    | 34(74)    | 35(75)    | 36        |
| O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M | O V D L M |
|           |           |           |           |           |           |           |           |           |           |           |           |

**Condição Dentária**

Hígido 0 A  
Cariado 1 B  
Restaurado com cárie 2 C  
Restaurado sem cárie 3 D  
Perdido por cárie 4 E  
Perdido por outras razões 5  
Selante, verniz 6 F  
Apoio de ponte ou coroa 7 G  
Não erupcionado 8  
Trauma T  
Excluído 9

Perm. Dec.

**SUMÁRIO - Dente**

| c | e | o | ceo-d | tp | hig | C | P | O | CPO-D | TI | HIG |
|---|---|---|-------|----|-----|---|---|---|-------|----|-----|
|   |   |   |       |    |     |   |   |   |       |    |     |

0 Normal  
1 Questionável  
2 Muito leve  
3 Leve  
4 Moderada  
5 Severa

**Fluorose**

**Malocclusão**

0- normal  
1- leve  
2- moder.

1- ☐ Angle (classe I, II, III)  
0- normal 1- meia cúspide  
2- uma cúspide

**Anomalias dento-faciais**

2- ☐ mordida cruzada  
A- anterior 0- ausente 1- unilateral  
B- posterior 2- bilateral  
C- ant + post

3- ☐ overjet (mm)

4- ☐ mordida aberta ant (mm)  
0- ausente 9- não registrado

**Condição Gingival**

0- ausência de sangramento  
1- sangramento (3 ou mais coroas sangrantes)

|    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 16 | 55 | 54 | 53 | 52 | 51 | 61 | 62 | 63 | 64 | 65 | 26 |
|    |    |    |    |    |    |    |    |    |    |    |    |
| 46 | 85 | 84 | 83 | 82 | 81 | 71 | 72 | 73 | 74 | 75 | 36 |
|    |    |    |    |    |    |    |    |    |    |    |    |

6- ☐ mordida profunda  
0- ausente 1- (1/3)  
2- (2/3) 3- total

7- ☐ Apinhamento 0- sem ap 1- um segm ap  
Espaçamento 2- dois ou mais segm ap

8- ☐ respirador bucal  
deglut atípica  
0- não 1- sim

9- ☐ vedamento labial  
0- aus 1- forçado  
2- presente

10- ☐ interposição labial  
durante a deglutição  
0- não 1- sim 2- quest.

Observações: \_\_\_\_\_

## APÊNDICE 4

### QUESTIONÁRIO SOCIOECONOMICO (ABEP)

#### Questionário sócio econômico aos pais ou responsáveis

| <b>Quantidade de Itens</b>                                   | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4 ou +</b> |
|--------------------------------------------------------------|----------|----------|----------|----------|---------------|
| Televisão em cores                                           | 0        | 2        | 3        | 4        | 5             |
| Rádio                                                        | 0        | 1        | 2        | 3        | 4             |
| Banheiro                                                     | 0        | 2        | 3        | 4        | 4             |
| Automóvel                                                    | 0        | 2        | 4        | 5        | 5             |
| Empregada mensalista                                         | 0        | 2        | 4        | 4        | 4             |
| Aspirador de pó                                              | 0        | 1        | 1        | 1        | 1             |
| Máquina de lavar                                             | 0        | 1        | 1        | 1        | 1             |
| Videocassete e/ou DVD                                        | 0        | 2        | 2        | 2        | 2             |
| Geladeira                                                    | 0        | 2        | 2        | 2        | 2             |
| Freezer (aparelho independente ou parte da geladeira duplex) | 0        | 1        | 1        | 1        | 1             |

| Grau de Instrução do chefe de família   | Pontuação |
|-----------------------------------------|-----------|
| Analfabeto / Primário incompleto        | 0         |
| Primário completo / Ginásial incompleto | 1         |
| Ginásial completo / Colegial incompleto | 2         |
| Colegial completo / Superior incompleto | 3         |
| Superior completo                       | 5         |

| Classes | Pontos (total) | Intervalo de renda (R\$) | Renda média mensal domiciliar (R\$) |
|---------|----------------|--------------------------|-------------------------------------|
| A1      | 30-34          | acima de 10.190          | 17.403                              |
| A2      | 25-29          | de 6.210 a 10.190        | 7.846                               |
| B1      | 21-24          | de 3.822 a 6.209         | 4.461                               |
| B2      | 17-20          | de 2.150 a 3.821         | 2.397                               |
| C       | 11-16          | de 1.036 a 2.149         | 1.370                               |
| D       | 6-10           | de 479 a 1.035           | 776                                 |
| E       | 0-5            | até 478                  | 401                                 |

**Obrigada pela colaboração!**



# ANEXO 1

Questionário de Saúde Bucal Infantil – 8 a 10 anos\*

## VERSÃO CURTA - 8

Data de hoje: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Dia Mês Ano

**PRIMEIRO, RESPONDA ALGUMAS PERGUNTAS SOBRE VOCÊ**

**1. Você é um menino ou uma menina?**

☐ Menino

☐ Menina

**2. Quando você nasceu?** \_\_\_\_/\_\_\_\_/\_\_\_\_ **Idade** \_\_\_\_  
Dia Mês Ano

**3. Quando você pensa em seus dentes ou boca, você acha que eles são:**

☐ Muito bons

☐ Bons

☐ Mais ou menos

☐ Ruins

**4. Quanto seus dentes ou boca lhe incomodam no dia-a-dia?**

☐ Nem um pouco

☐ Só um pouquinho

☐ Mais ou menos

☐ Muito

**AGORA RESPONDA ALGUMAS PERGUNTAS SOBRE O QUE ACONTECEU COM SEUS  
DENTES E SUA BOCA NAS ÚLTIMAS 4 SEMANAS**

**7. Você teve dor em seus dentes quando tomou bebidas geladas ou comeu alimentos quentes?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**8. Você sentiu alimento grudado em seus dentes?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**11. Você teve dificuldade para morder ou mastigar alimentos duros, como maçã, milho verde na espiga ou bife devido aos seus dentes ou sua boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**12. Você teve dificuldade para comer o que gostaria devido a problemas nos seus dentes ou na sua boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

AGORA RESPONDA ALGUMAS PERGUNTAS SOBRE O QUE ACONTECEU COM  
SEUS SENTIMENTOS NAS ÚLTIMAS 4 SEMANAS

**18. Você ficou preocupado com o que as outras pessoas pensam sobre seus dentes ou sua boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**19. Você ficou preocupado porque você não é tão bonito quanto os outros por causa de seus dentes ou sua boca nas últimas 4 semanas?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

|                                                                                                        |
|--------------------------------------------------------------------------------------------------------|
| <p><b>RESPONDA ALGUMAS PERGUNTAS SOBRE O QUE ACONTECEU NA SUA ESCOLA<br/>NAS ÚLTIMAS 4 SEMANAS</b></p> |
|--------------------------------------------------------------------------------------------------------|

**24. Você não quis sorrir ou rir quando estava com outras crianças devido a problemas nos seus dentes ou na sua boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**28. Outras crianças tiraram sarro de você ou lhe apelidaram devido aos seus dentes ou sua boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**PRONTO, ACABOU!**

**OBRIGADA POR SUA AJUDA.**

\* “Questionário de Saúde Bucal Infantil – 8 a 10 anos”. Traduzido e impresso por Taís de Souza Barbosa para fins específicos de pesquisa com permissão dos editores. Todos os direitos reservados. Nenhuma reprodução, integral ou em parte, pode ser feita sem a prévia autorização escrita da autora.

## ANEXO 2

Questionário de Saúde Bucal Infantil – 11 a 14 anos\*

### VERSÃO CURTA - 8

Data de hoje: \_\_\_\_/\_\_\_\_/\_\_\_\_  
DIA MÊS ANO

|                                                        |
|--------------------------------------------------------|
| <b>PRIMEIRO, RESPONDA ALGUMAS PERGUNTAS SOBRE VOCÊ</b> |
|--------------------------------------------------------|

**1. Você é um menino ou uma menina?**

☐ Menino

☐ Menina

**2. Quando você nasceu?** \_\_\_\_/\_\_\_\_/\_\_\_\_

DIA MÊS ANO

**3. Você acha que a saúde de seus dentes, lábios, maxilares e boca é:**

☐ Excelente

☐ Muito boa

☐ Boa

☐ Mais ou menos

☐ Ruim

**4. As condições (boas ou ruins) de seus dentes, lábios ou boca atrapalham sua vida no dia a dia?**

- ☐ Nem um pouco
- ☐ Só um pouquinho
- ☐ Mais ou menos
- ☐ Muito
- ☐ Muitíssimo

PERGUNTAS SOBRE PROBLEMAS BUCAIS

NOS ÚLTIMOS 3 MESES...

**5. Você teve dor em seus dentes, lábios, maxilares ou boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**9. Você teve alimento grudado dentro ou entre os dentes?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**11. Você costuma respirar pela boca (ou ficar de boca aberta) devido a problemas nos seus dentes, lábios, maxilares ou boca?**

- ☐ Nunca

- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**19. Você teve dificuldade para beber ou comer alimentos quentes ou gelados devido aos seus dentes, lábios, maxilares ou boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

PERGUNTAS SOBRE SENTIMENTOS

NOS ÚLTIMOS 3 MESES...

**23. Você ficou preocupado com o que os outros pensam sobre seus dentes, lábios, boca ou maxilares?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**27. Você se preocupou por não ser tão saudável quanto os outros devido aos seus dentes, lábios, maxilares ou boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**PERGUNTAS SOBRE SUAS ATIVIDADES NO TEMPO LIVRE E SOBRE ESTAR  
COM OUTRAS PESSOAS**

**NOS ÚLTIMOS 3 MESES...**

**35. Você não quis sorrir ou rir quando estava perto de outras crianças devido aos seus dentes, lábios, maxilares ou boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**39. Outras crianças caçoaram (tiraram sarro) de você devido aos seus dentes, lábios, maxilares ou boca?**

- ☐ Nunca
- ☐ Uma ou duas vezes
- ☐ Algumas vezes
- ☐ Várias vezes
- ☐ Todos os dias ou quase todos os dias

**PRONTO, ACABOU! OBRIGADO POR NOS AJUDAR!**



## ANEXO 3



**COMITÊ DE ÉTICA EM PESQUISA  
FACULDADE DE ODONTOLOGIA DE PIRACICABA  
UNIVERSIDADE ESTADUAL DE CAMPINAS**



### CERTIFICADO

O Comitê de Ética em Pesquisa da FOP-UNICAMP certifica que o projeto de pesquisa **"Influência de variáveis socioeconômicas no impacto da saúde bucal, na qualidade de vida e nos níveis salivares de cortisol e alfa-amilase de crianças e adolescentes"**, protocolo nº 015/2013, dos pesquisadores Fabíola Diogo de Siqueira Frota e Maria Beatriz Duarte Gavião, satisfaz as exigências do Conselho Nacional de Saúde - Ministério da Saúde para as pesquisas em seres humanos e foi aprovado por este comitê em 15/03/2013.

The Ethics Committee in Research of the School of Dentistry of Piracicaba - State University of Campinas, certify that the project **"Influence of socioeconomic variables on the oral health-related quality of life and levels of salivary cortisol and alpha-amylase in children and adolescents"**, register number 015/2013, of Fabíola Diogo de Siqueira Frota and Maria Beatriz Duarte Gavião, comply with the recommendations of the National Health Council - Ministry of Health of Brazil for research in human subjects and therefore was approved by this committee at 03/15/2013.

**Prof. Dr. Felipe Bevilacqua Prado**  
Secretário  
CEP/FOP/UNICAMP

**Profa. Dra. Livia Maria Andalo Tenuta**  
Coordenadora  
CEP/FOP/UNICAMP

Nota: O título do protocolo aparece como fornecido pelos pesquisadores, sem qualquer edição.  
Notice: The title of the project appears as provided by the authors, without editing.

## ANEXO 4

### COMPROVANTE DE SUBMISSÃO DE ARTIGO PARA PUBLICAÇÃO

14/5/2014 ScholarOne Manuscripts

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#### Submission Confirmation

Thank you for submitting your manuscript to *Pediatric Dentistry*.

Manuscript ID: PediaD-2014-05-3217

Title: Socioeconomic status, oral conditions and oral habits related to quality of life in schoolchildren

Authors: frota, fabiola  
Lawrence, Herenia  
Gavião, Maria Beatriz

Date Submitted: 14-May-2014

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